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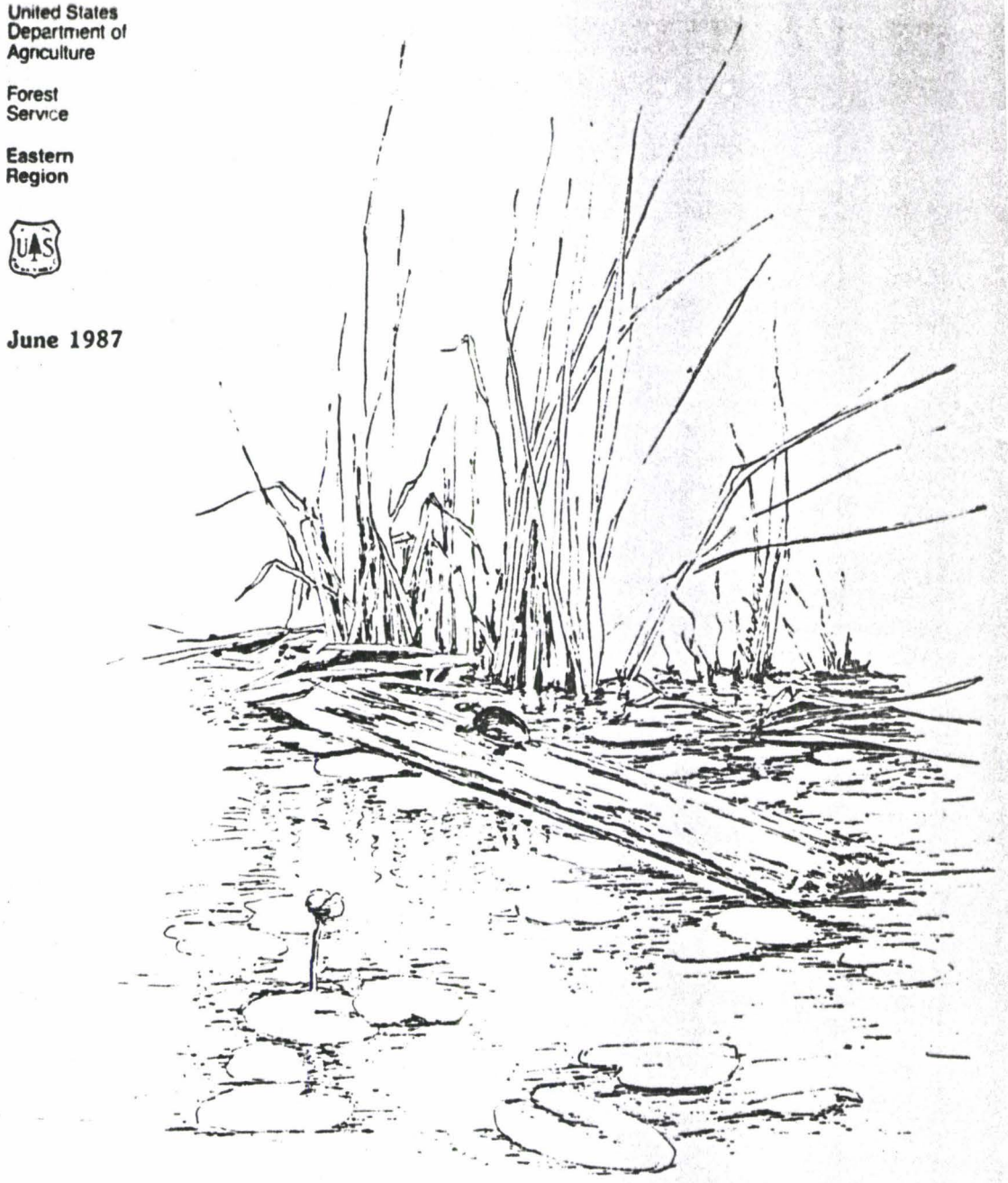

June 1987

IRON JAW: A Semiprimitive Motorized Area Management Plan

Professional Development For Outdoor Recreation Management
Clemson University Class of 1986

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Hiawatha National Forest Escanaba, Michigan

86

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Clemson University Class of 1986
Professional Development for Outdoor Recreation Management

This paper was prepared as a student project in partial fulfillment of the requirements of the Professional Development for Outdoor Recreation Management Program at Clemson University. It in no way reflects USDA Forest Service policy, nor are the opinions expressed those of anyone other than the author. The analysis presented in chapter IV is the product of a team effort, likewise, it does not reflect USDA-Forest Service policy.

ABSTRACT

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IRON JAW: A Semiprimitive Motorized Area Management Plan

Semiprimitive recreation opportunities are not new to the Hiawatha National Forest, but management of the semiprimitive experience is relatively new. Many individual resource plans have been developed across the Forest, yet none apply to the philosophy of semiprimitive motorized management. The semiprimitive concept is illusive and holds different meaning for different people. With the implementation of the Hiawatha's Land and Resource Management Plan and the initiation of the Region 9 Integrated Resource Management approach, there is a need to develop what semiprimitive motorized management means to the Hiawatha.

The character of the Iron Jaw Area is unique to the Forest. Lakes, ponds and streams are scattered among rolling hills forested with hardwoods and large conifers. Terrain, wildlife, and scenic features offer a special setting for an abundance of dispersed recreation activities. Management opportunities also exist for high quality production in wildlife, timber and fisheries resources. Development of this Iron Jaw paper includes 1) giving greater insight to semiprimitive management, and 2) presenting an Iron Jaw Area management plan with opportunities to develop, retain and enhance semiprimitive recreation values while managing a variety of other resources.

ACKNOWLEDGEMENTS

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A good share of this project was accomplished by an analysis team from the Forest Service's Regional Office in Milwaukee, Wisconsin. The team provided the analysis which proved to be the base for this project. Working as a member of the team was one of the finest training experiences I have been privileged to receive. In addition, I'm delighted to have gained several friends. They are:

Jack Craven, Assistant Director for Watershed and Minerals
Ray Ellis, Group Leader for Timber Plans and Inventories
Robert Hollingsworth, Regional Fisheries Biologist
Michael Miller, Presale/Harvesting Specialist
Paul Monson, Regional Economist
John Steger, Regional Transportation Planner
Gaylord Yost, Wilderness/Dispersed Recreation Specialist

I thank my Forest Supervisor Ken Holtje for his faith, support and for the involvement of the Regional Team. It was Ken's idea to utilize the team, and he arranged their participation. Thanks to Dewayne Ide, my supervisor, for the time, support, and the endurance he demonstrated throughout the project.

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Jack McHugh, a local recreation entrepreneur, offered a user's perspective to the team during the analysis process.

I am grateful to George "Howie" Lyon, Jr., District Ranger, Manistique, for his contributions to the team, for providing the land base to analyze, and for offering "intermittent" team members Bryan Barnett, Deb LeBlanc and Bob Panek. I also thank Howie for his support and encouragement during this project and during the last several years. Jim Klus and May McDermott, also of the Manistique District, provided recreation use information. Jim Bruce and Vern Schultz of the Munising Ranger District contributed valuable ideas on roads and trails.

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EXECUTIVE SUMMARY

IRON JAW: A Semiprimitive Motorized Area Management Plan

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With lakes, ponds and streams scattered among rolling hills forested with hardwoods, white pine and hemlock, the feeling of the Iron Jaw Area touches one's soul.

Recent Hiawatha National Forest Land Management Plan designation as a semiprimitive motorized area requires special management of a special place. Opportunities for semiprimitive recreation activities are not new to the Hiawatha National Forest, yet managing for a semiprimitive motorized experience is new. Past planning for areas such as Iron Jaw have not incorporated concepts of the Recreation Opportunity Spectrum.

In addition to the opportunity to manage the area for its recreational value and aesthetic qualities, there is desire to manage a variety of other resources. The Iron Jaw Area holds great potential. Wildlife, timber and fisheries resources in Iron Jaw are among the finest on the Forest. The related management problems are complex. What is semiprimitive motorized recreation management? How are other resources to be managed to utilize

those resources yet still provide for semiprimitive recreation experiences? Can management realistically accommodate so many resources in the same place, at the same time?

Analysis of issues, concerns, conflicts and problems resulted in a management plan specific to the resources and opportunities of the Iron Jaw Area. The preferred management alternative presents the optimum mix of impacts and influences the area can absorb or support, while retaining the setting, opportunity and experience levels indicative of a semiprimitive motorized area.

Analysis determined that all resources cannot be managed to their full potential if the semiprimitive environment is to be maintained. Treatments or facilities have been designed to first achieve the desired semiprimitive condition, with measurable products the result, not the impetus of the treatment. Existing Forest Plan management direction does not preclude treatment consistent with the semiprimitive motorized philosophy, nor does existing direction alone provide adequate guidance to ensure proper management. Advanced training and understanding are needed to ensure application of the Recreation Opportunity Spectrum.

Refining or relaying an understanding of semiprimitive motorized concepts presented a greater challenge. The users (those for whom we are providing the setting and opportunity for semiprimitive experiences) have immersed themselves in the atmosphere of the area. Users not only view the area with a different eye, but they feel with a different touch. We, as managers who have been

trained to think of accomplishment in projects and outputs, must now learn to manage for an environment which touches the soul.

The Forest Plan has declared semiprimitive motorized areas as appearing different and being less influenced by management activities than the general forest. Yet specific guidelines for size, acre and treatment techniques alone cannot dictate attainment of the semiprimitive condition or setting. Sensitivity to user expectations must be brought forward.

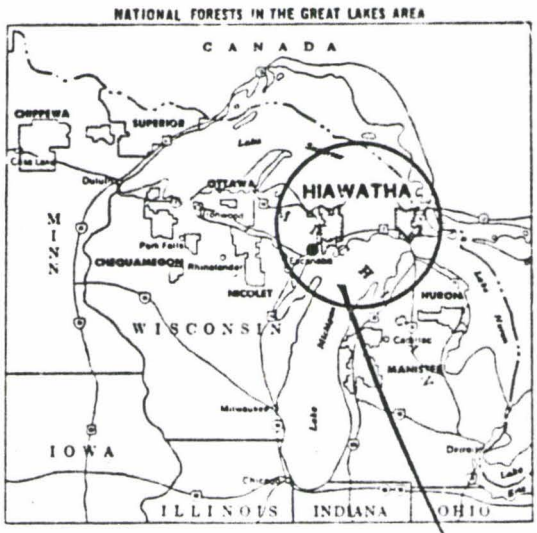
Specific, individual area management plans, training, sensitivity and commitment to managing resources in a non-traditional way are a necessity if quality semiprimitive motorized recreation opportunities are to be provided.

CHAPTER I INTRODUCTION

Figure I-1

HIAWATHA National Forest

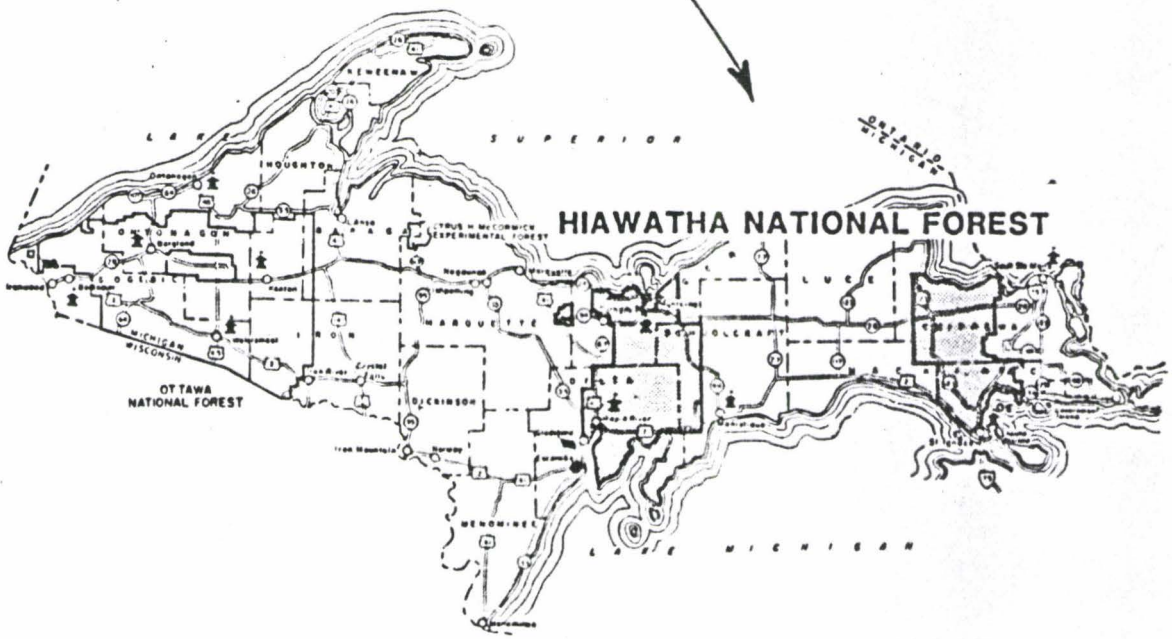
VICINITY MAP



Legend

National Forest

National Forest Headquarters



CHAPTER I - INTRODUCTION

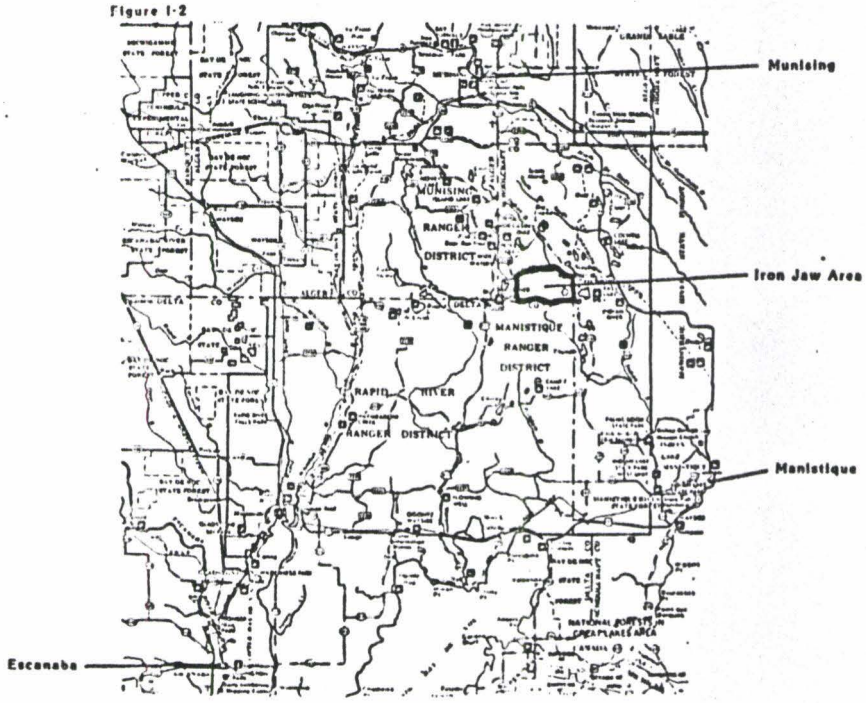
STATEMENT OF PURPOSE:

The intent of this paper is twofold: 1) to give greater insight to semiprimitive motorized concepts as applied to the Hiawatha Forest, and 2) to present an Iron Jaw Area management plan with opportunities to develop, retain and enhance semiprimitive recreation values while managing a variety of resources.

DESCRIPTION OF PROJECT AREA:

This paper specifically addresses the Iron Jaw Area, a 7400 acre tract in the center of the west side of the Hiawatha National Forest (see Figures I-1, I-2 and the area map at the back of this paper). The area lies at the north end of the Manistique Ranger District, adjacent to the Munising Ranger District.

Figure I-2



The Iron Jaw Area is unique. Approximately seven percent of the Hiawatha Forest is comprised of similar territory. Lakes, ponds and streams are scattered among rolling hills forested with hardwoods, large white pine and hemlock. Forested stands cover nearly 90 percent of the landscape. Conifer swamps lie south of the Indian River, which traverses the area's northern side.

Eleven lakes and several ponds provide riparian area associated habitat for fish and wildlife species including pike, bass, perch, brook and brown trout, common loon, sandhill crane, otter, mink, muskrat, beaver, raccoon and various waterfowl. Black bear, bobcat, whitetail deer, coyote, gray squirrel, sharptail grouse and pileated woodpecker are among the upland wildlife species.

Two-lane sand and gravel all weather roads define the area's perimeter. Two-rut roads crisscross the interior. Most of the interior roads are unused and overgrown with saplings and ground vegetation. The old road network transects the land, with unroaded blocks generally no greater than 60 acres in size. Foot travel is the primary means of access along the old road network. Vehicle travel is possible on approximately one fourth of the road corridors.

The exceptional aesthetic quality of the area draws recreationists for camping, fishing and canoeing. Hunting, trapping and walking-in-the-woods are also popular activities, as are berry picking and the viewing of fall colors.

THE PROBLEM:

The Hiawatha Land and Resource Management Plan has designated Iron Jaw as a semiprimitive motorized area. The Recreation Opportunity Spectrum and the Eastern Region Supplement give much room for interpretation in their definition of the semiprimitive motorized class, as do the desired future condition statement and standards and guidelines of the Forest Plan.

The Hiawatha's Forest Plan standards and guidelines for semiprimitive motorized management (Forest Plan Management Area 6.2) show little difference from the most similar northern hardwood dominated roaded natural area (Management Area 2.2). Differences are primarily management techniques which are apparent to Forest managers but may not be evident to forest users. Differences in philosophy, and difficulties associated with implementing the concepts of the Recreation Opportunity Spectrum have contributed to a reluctance to accept semiprimitive motorized area designation.

No management or project plans which specifically address, apply or incorporate semiprimitive motorized concepts have been developed as yet, on the Forest. Interpretations of the semiprimitive concept among forest managers are diverse and elusive. Public understanding and expectations also vary. A variety of other resources within the area such as wildlife, timber and fisheries, are among the finest on the Forest. The problem is complex; what is semiprimitive motorized recreation management? How are other resources to be managed to utilize those resources yet still provide the setting, opportunity and the experience of semiprimitive recreation?

Although interpretations of semiprimitive motorized recreation management may vary, the unique setting and recreational opportunities of the Iron Jaw Area have long been recognized. The area has been managed under a special recreation designation since 1971 (see Appendix E - Summaries of Forest Service Internal Documents for a brief overview of management plans addressing the Iron Jaw Area).

LIMITATIONS:

Insights gained in understanding and applying semiprimitive motorized principles may be applied to semiprimitive motorized areas Forest-wide. It is recognized that those insights have been developed as a result of the Iron Jaw analysis. Continued refinement of management strategy for semiprimitive motorized areas is expected at the time other areas are analyzed.

The specific area planning provided by this paper is intended for application to the Iron Jaw Area only. Concerns identified in this paper as out of the scope of the Iron Jaw project have been remanded to management for further review. Those concerns are:

-Land ownership/administrative costs - Adjacent Compartment 30 requires separate analysis.
-Gravel resource - Gravel is to be obtained from outside the Iron Jaw area.
-Degraded recreation sites - Degraded site conditions must be resolved regardless of the management alternative selected.
-Law enforcement/administration - Law enforcement and administration of regulations would not vary by management alternative.

CHAPTER II LITERATURE REVIEW

CHAPTER II - LITERATURE REVIEW

A literature review was conducted to gain greater familiarity with recreation management, and to facilitate development of a workable management plan for the Iron Jaw Area. Specific objectives of the literature review were:

- -To improve understanding of the Recreation Opportunity Spectrum,
- -To acquire insight to social needs and activities applied to recreation management, and
- -To review recreation management history and the history of "special area" management on the Hiawatha National Forest.

Sources of publications were:

SOUTHFORNET - a computerized literature search

North Central Forest Experiment Station Information Center

Forest Service internal documents

Other Land Management Agency documents

Clemson Short Course Lectures and Handouts

Searches in the libraries of the Hiawatha's Supervisor's Office, the Manistique Ranger District Office, the Forest Service Eastern Region-Regional Office and in the personal literature collections of several Forest Service resource specialists.

Overview:

To improve understanding of the Recreation Opportunity Spectrum, documents explaining development of concepts and process of the system were reviewed. It is important that all levels of forest managers understand that the Recreation Opportunity Spectrum is not a specific guide for structure or classification of land. More importantly, it must be understood that the Recreation

Opportunity Spectrum is a philosophy of management. The Spectrum is used in management to provide opportunities for activities and experience levels. Outdoor recreation management must provide a setting in which quality recreation experiences can be gained by a variety of users (5, 7, 32, 40, 41). 1/

Managing by means of the Recreation Opportunity Spectrum is a change from traditional forest management aimed at attainment of a specified amount of product. Value judgments will be made by recreational users of a forest. When the quality of experience gained by a user meets that user's expectations, the Recreation Opportunity Spectrum objectives for that area will be met.

To acquire insight into social needs and activities as applied to recreation management, it is necessary to realize that recreation activities encompass both social needs which are fulfilled through interaction with other people, and self actualization needs which may be fulfilled through solitary personal involvement with nature (2, 8, 20, 25).

People try to regain, or repeat, intense personal experiences in the outdoors through seeking similar feelings in new environments or by returning to places where the experience was first encountered (20, 43). The tendency to return to an area is evidenced by groups returning to the Iron Jaw Area. Often, people also returned because their relatives formerly lived, worked or camped in the vicinity (17).

1/ Numbers indicate references. See "Literature Cited."

Recreation activities are tied to user-comfort, efficient use of leisure time, to the popularity of that activity, to the ease of participation, to desirable images associated with the activity, and to the opportunity to demonstrate skills (6). These attributes were confirmed as desirable in contacts with recreational users of Iron Jaw (4). Although users spoke of their experiences in different terms, the access, comfort of drive-to camping, being with friends and skill in fishing were an integral part of their camping experience (see Appendix B).

Recreation benefits derived by users are important aspects which have often been overlooked. Acquiring social information on types and needs of users is imperative in planning and managing the setting in which recreation activities occur (7, 24). A problem (that of including recreation benefits in management) arises when economics is considered. Non-priced recreational benefits cannot be measured easily (45).

Conflicts among recreational users are yet another problem with which management must contend. Uses such as motorized all-terrain vehicles and all-terrain bicycles (mountain bikes) (16, 22, 25) may conflict if managed in the same area. Values and attitudes of backpack campers and recreational vehicle campers differ. Conflict resolution may not be possible if it is solely aimed at education and understanding, but often may be avoided by separation of uses.

Review of management history and "special area" management in (and adjacent to) the Hiawatha National Forest revealed that there have been several initiatives in managing areas for

non-traditional uses (See Appendix E - Summaries of Forest Service Internal Documents). Management of these areas would fulfill needs to provide multiple use of National Forest (34).

"Special Areas" or "Quiet Areas" which evolved into the current Iron Jaw semiprimitive area, are not generally available elsewhere (5). Dispersed area camping experiences such as those available at permit-required sites in the Iron Jaw Area, are not commonly found in the geographic vicinity. The Seney National Wildlife Refuge allows no overnight camping (21, 44) except by special permit in deer season. Camping is allowed only in designated campgrounds in the Pictured Rocks National Lakeshore (38). Remote area camping is allowed (with a permit) on State Forest land in Michigan (1, 33), however, primary use is during deer season.

Few guidelines were given for management implementation of the Iron Jaw "Quiet Area" in the past (11, 12, 13, 14, 15, 35). Direction was to provide an area of solitude for recreationis With lack of specific implementation direction, the tendency was to put the Iron Jaw Area in somewhat of a holding pattern. Forest Plan direction (10, 34, 36, 40, 41) clarified the status of Iron Jaw by designation as a semiprimitive motorized management area, yet continued to leave room for implementation interpretation. With the implementation of the Hiawatha Forest Land and Resource Management Plan and the initiation of the Forest Service Eastern Region Integrated Resource Management (IRM) approach, (47), there is a need to develop management strategies for semiprimitive motorized areas.

CHAPTER III METHODOLOGY

CHAPTER III - METHODOLOGY

The approach to addressing the semiprimitive motorized question on the Hiawatha National Forest was multi-faceted. In addition to the literature search discussed in Chapter II, a team approach was used for analysis of problems, issues, concerns and opportunities specific to the Iron Jaw Area; personal telephone conversations were held with users of the Iron Jaw Area; an open house was held on the Manistique Ranger District to surface any emerging public issues; and other, nearby natural resource agency managers were contacted for information regarding recreation management.

THE TEAM:

The analysis team utilized was a Forest Service group from the Region 9 headquarters in Milwaukee. To gain better Regional level understanding of Forest level management, and to learn the best means of assisting Forests with the Integrated Resource Management process, seven Regional Office employees joined the author in forming a team to analyze options for management (46, 47). The team met for a total of 12 days of analysis, including 2 trips to the field (31). The team-preferred, alternative solution for management of the Iron Jaw Area is found in Chapter V.

Members of the Iron Jaw analysis team included:

Jack Craven, Assistant Director for Watershed and Minerals
Ray Ellis, Group Leader for Timber Plans and Inventories
Robert Hollingsworth, Regional Fisheries Biologist
Michael Miller, Presale/Harvesting Specialist
Paul Monson, Regional Economist
Mary Mumford, Forester - Hiawatha N.F.
John Steger, Regional Transportation Planner
Gaylord Yost, Wilderness/Dispersed Area Recreation Specialist

Additional specialists and consultants to the team are listed in Appendix C - Consultations.

PUBLIC CONTACTS:

Telephone conversations were held with 20 people who have camped in the Iron Jaw Area. The contacts were made to gain better understanding of experiences and expectations of users (43). Intent of contacts was not to seek statistically sound conclusions, but to gain insight into the perceptions of users. Observations and opinions of recreational users were considered in determining the perception of semiprimitive and in developing the conclusions of this paper (43) (see Appendix B - Public Contacts/Comments for questions and responses from telephone conversations).

An open house was held at the Manistique Ranger District on November 19, 1986, to discuss preliminary management proposals for the Iron Jaw Area and to surface possible new public issues (see Appendix B for summaries of public comments received).

Jack McHugh, a local recreation entrepreneur, joined the analysis team for 4 days, providing his perspective in semiprimitive recreation needs.

OTHER AGENCY CONTACTS:

Management plans were reviewed and contacts were made with managers from other land management agencies within close proximity of the Hiawatha National Forest. The three other land management agencies in the area are:

- Escanaba River and Lake Superior State Forests, Michigan Department of Natural Resources.
- Pictured Rocks National Lakeshore, National Park Service, United States Department of Interior.

- Seney National Wildlife Refuge, United States Department of Interior - Fish and Wildlife Service.

The purpose of these contacts was to determine the availability, of semiprimitive recreation opportunities (or similar experience opportunities) within the eastern Upper Peninsula of Michigan geographic vicinity.

CHAPTER IV DISCUSSION

CHAPTER IV - DISCUSSION

CONCEPTS OF SEMIPRIMITIVE MOTORIZED:

What Is Semiprimitive Motorized?

Every one of our previous experiences in life will, in some way, affect the mental perspective from which we see the world around us. All things that we perceive can stimulate our senses and imaginations in many ways; consequently, each of us forms our own unique interpretation. An abstract thing, such as a semiprimitive experience, is very complicated. The number of different perceptions becomes greater and greater with the addition of more people or users. The perception of the object or experience becomes more complicated when viewed from a managerial perspective. Forest Service line managers or resource specialists trying to define an experience may not see the same experience or setting that members of the public see (43, 45).

Many attempts have been made to explain the semiprimitive concept. The Recreation Opportunity Spectrum is the most recent means of displaying the range of recreation opportunities available to the user. The six classes in the continuum of the Recreation Opportunity Spectrum are displayed in Appendix A. The Spectrum was built upon many studies and efforts in order to provide managers with guidelines for meeting recreation demand (5). Three basic dimensions of outdoor recreation ("activity-opportunity," "setting-attribute" and "experience-based setting") were prime factors in developing the Recreation Opportunity Spectrum system (7, 32).

To better understand just what semiprimitive motorized is, elaboration on "experienced-based setting" management is taken from the Recreation Opportunity Spectrum (40, 41): "This forest is characterized by its predominant natural or natural-appearing environment. Visitor interaction is low, although there is evidence of other users. The recreation experience provides for a high probability of experiencing isolation, independence, closeness to nature and self reliance with challenge and risk present. The size of the area (intended to be greater than 2500 acres) gives a strong feeling of remoteness from the more heavily used and developed areas. Minimum on-site controls and restrictions may be present but are subtle (See Appendix A, Recreation Opportunity Spectrum, for activity, setting, experience, remoteness, size, evidence of humans, social and managerial-setting guidelines from the Recreation Opportunity Spectrum book).

Desired future condition sought in semiprimitive motorized areas, as defined in the Forest Plan, includes a setting in which a forest of long-lived tree species appears largely unaltered for long periods of time. Wildlife species are expected to be those which require habitats of relative seclusion. Recreation activities are expected to be dispersed and non-developed in nature.

RESOURCES WITHIN THE AREA:

The abundance of quality resources in the area adds complexity to planning. Each individual resource could be managed intensely for its sole use, yet the challenge of Iron Jaw is to provide for a near-natural semiprimitive setting, and experience, while managing

the other resources as well. Existing resources described below are those which must be blended with the philosophy of the Recreation Opportunity Spectrum for holistic planning in the Iron Jaw Area.

Recreation Features:

The Indian River, as it travels through the Iron Jaw Area, has been designated a Potential Wild and Scenic River by the Nationwide Rivers Inventory (37). A Forest study team inventoried this portion of the river as a potential Recreation Reach. The river is also a Hiawatha Forest designated canoe route and a State of Michigan designated trout stream.

Ten recreation sites dispersed along the shores of Swan, Iron Jaw, and Triangle Lakes, and Lake Nineteen, have been used since the 1950's (or earlier) and are now regulated by a permit system. The permit sites are heavily used, with over 400 permits issued for the sites in the last 6 years. Campsites are non-developed in nature but are accessible by vehicle. Site number posts are present at all permit sites. Fire rings have been user-constructed with native rock. Forest Service constructed (primitive type) toilets are provided at two of the permit sites. Stairs and a rail fence have been constructed at one permit site. An additional 25 non-permit-required, dispersed recreation sites have been identified in the area. Those sites are found along the Indian River, the shores of lakes and ponds, and in hunting areas. No facilities are present at these user-created sites.

Five miles of hiking/walking trails were constructed in 1984 and 1985. Campers have developed an additional two miles of walking

trails around the lakes on which camping permits are required. Hikers, trappers, hunters and berry pickers also use the old road network as trails. Two canoe portages are user-developed.

Many of the waterfront recreation sites are also cultural resource sites. The 24 known historic sites include logging camps, homesteads and bridge crossings. Three prehistoric sites are also known. Several historic sites have been damaged by artifact collectors.

Use of three and four-wheel, all-terrain vehicles has increased within the area in the past several years. Vehicles travel on a few of the closed roads and on user-developed routes.

Timber Features:

Mixed northern hardwoods comprise nearly 40 percent of the timber in the area. Red and white pine make up an additional 20 percent of the timber stands. The hardwood and pine species are of high value. Timber stands in the Iron Jaw Area are among the finest on the Hiawatha Forest. These stands have high potential for quality sawtimber and veneer production.

Fisheries Features:

The Indian River and the small segment of the Little Indian River within Iron Jaw are State-of-Michigan designated, coldwater trout streams. These streams support both native brook trout and hatchery-origin brown trout. Lake Nineteen and Rim Lake are State-managed coldwater trout lakes. Lakes managed for warmwater fisheries include: Iron Jaw, Verdant, Rumble, Sprinkler, and Triangle Lakes. Swan Lake is managed for both cold and warmwater

fisheries. Two other lakes, Spud and Dinner, have little fishery potential.

Wildlife Features:

Wildlife management within the Iron Jaw area must consider the viability of the species as well as the habitat requirements. The following species are threatened or Regional Forester (RF) proposed sensitive species in Iron Jaw:

Pine Marten (Michigan Threatened)
Sharptail Grouse (Proposed RF Sensitive)
Sandhill Crane (Proposed RF Sensitive)
Common Loon (Michigan Threatened)
Two Potential Bald Eagle Territories (Federal Threatened)
Lake Sturgeon - Indian River (Michigan Threatened)

In addition to the aforementioned list, the Hiawatha's Land and Resource Management Plan requires management of adequate habitat necessary to sustain viable populations of selected management Indicator Species. Those Indicator Species found in Iron Jaw include: bobcat, black bear, pine marten, pileated woodpecker, and blackthroated green warbler which require areas of secluded, older forests; gray squirrel requires large trees with cavities for nesting; wood duck find habitat in cavities of large trees within one half mile of water; sandhill cranes nest in secluded bogs; common loon requires secluded and undeveloped shorelines of waterbodies greater than 50 acres. The sharptail grouse requires upland openings of greater than 200 acres, while the bald eagle finds habitat in super-canopy trees within a mile of large bodies of water. Beaver are found in riparian areas with aspen trees nearby. The whitetail deer requires lowland conifer areas in winter, and seedling-sapling or open areas in summer. Brook trout, lake sturgeon, northern pike, largemouth and smallmouth bass require streams and lakes with areas of spawning gravel and

aquatic vegetation. Older forested stands along the river provide riparian associated habitat for many wildlife species, and as trees fall in the river, a source of hiding cover for fish.

Land Features:

Nearly 50 miles of road corridors are found within the Iron Jaw Area. Car or pickup truck access is currently possible on seven of these roads (approximately 14 miles). Other road corridors are overgrown with seedlings and saplings yet remain accessible by foot travel, snowmobile, or off-highway vehicles such as two, three or four-wheel, all-terrain vehicles. All except four "open" roads in the interior were designated closed from the time of "Quiet Area" management classification in 1973 until Final Forest Plan release in October 1986. Three other roads have since been "opened." The seven currently "open" roads provide access to Swan, Triangle, and Iron Jaw Lakes and Lake Nineteen.

The boundaries of the Iron Jaw Area are formed by narrow, two-lane, sand and gravel roads on the north, west and south sides. The east side of the Iron Jaw Area is bounded by a two-lane, gravel road. Both the east and south side roads are county roads.

Landforms include flat to rolling hills of highly productive hardwood sands which are present in all but the western one quarter of the area. In the west are outwash sand flats. In the north central area, open and forested wetlands are found on muck soils.

Two separate parcels of private ownership exist. Eighty acres of private land are in the southeast corner and approximately seven acres along the north central boundary. The State of Michigan or a third party holds nearly two thirds of the subsurface rights (gas, oil, coal, and minerals). Gas or oil leases (or applications for leases) have been granted or are pending on approximately 1200 acres. Landform indicates potential for gravel deposits in approximately twenty percent of the Iron Jaw Area.

Social Considerations:

Analysis incorporated into the Forest Land and Resource Management Plan included the Iron Jaw Area in the Munising/Lakes Country social assessment subunit. Landform of the Iron Jaw Area is typical of that in the social subunit. The area varies from the majority of the subunit, in that little private ownership occurs. Major characteristics of this social subunit are recreation and tourism. Recreation activities are undertaken by summer residents of the vicinity and by tourists and campers from communities as close as Munising or Manistique and as far as Illinois and Ohio. Users are sensitive to forest aesthetics and to management activities within the Forest.

The Munising/Lakes Country area lies within Schoolcraft, Delta and Alger Counties. Recreational tourism and forestry are the dominant industries of the area. User groups of the Iron Jaw Area include:

Anglers
Berry Pickers/Gatherers
Campers
Canoers
Hikers
Hunters
Mountain Bikers
Off-Highway vehicle users (ATVs, ORVs, snowmobiles)

Site see-ers
Trappers

Summaries of public comments pertaining to the Munising/Lakes Country, comments from the Iron Jaw Area public open house at the Manistique District, and a summary of comments gained from telephone conversations with Iron Jaw Area users are found in APPENDIX B - Public Contacts/Comments.

PROBLEMS (Issues, Concerns and Opportunities):

The challenge of management is to develop, retain and enhance semiprimitive recreational values while managing for the previously described resources and uses of the Iron Jaw Area. Concepts of the Recreation Opportunity Spectrum were blended into the following analysis process which sought solutions in addressing the resource conflicts.

Specific problems outlined were identified based on resources, uses and issues/concerns/opportunities raised by both the public and Forest Service management. The 14 problems addressed are as follows:

1. Old growth
2. Pine Marten
3. Loons vs. people at Rim Lake
4. Ownership
5. Gravel
6. Riparian recreation access
7. Recreation experience
8. Conflict among semiprimitive area users
9. River bank erosion
10. Conflict - timber management and recreational users
11. Too many open roads
12. Number of roads being driven
13. Road standard conflicts
14. County Road 440

Each of the 14 problems is briefly described below, with potential solutions listed after the problems. Following the potential solutions are the evaluation criteria against which the potential solutions were weighed as a means of developing the various management alternatives.

1. OLD GROWTH - The area contains insufficient old growth. The Forest Plan calls for thirteen percent old growth; current total is five percent. Insufficient old growth detracts from the "big tree" environment inherent to the semiprimitive setting. Lack of old growth also prevents development of habitat for many wildlife species, including eagle nesting habitat which is critically needed to realize the Forest's goal of 40 nesting pairs. Portions of this area lie in two currently unoccupied eagle territories.

   POTENTIAL SOLUTIONS:
   - Designate sufficient area by priorities set forth in the Forest Plan, to assure 13 percent old growth.
   - Designate 13 percent and accelerate achievement of old growth conditions with TSI type activities. 2/
   - Designate 13 percent but achieve old growth naturally.

   EVALUATION CRITERIA:
   - Percent of old growth around lakes and river.
   - Minimum percentages as stated in the Forest Plan.

2/ Achieve "acceleration" of the old growth condition by girdling up to 25 trees per acre. Girdling will kill the trees, providing openings in the forest canopy. Additional sunlight reaching the forest floor will cause new growth to add to the verticle diversity in the stand. Fallen and dead trees will contribute dead and down wood which is characteristic of an old growth forest.

2. PINE MARTEN - Pine marten habitat is inadequate. A Forest Plan objective is to extend the range of the Michigan threatened pine marten. Continuous stands featuring at least 40 percent conifers, with 50 percent canopy closure, must extend completely through the area to assure continuity with marten habitat to the south. Older forests and remote habitat conditions are also desirable for pine marten ard contribute to the semiprimitive environment.

POTENTIAL SOLUTIONS:
- Provide pine marten habitat throughout entire area, exclusive of the west 1/4 where opening and savannahs will be created and/or maintained for sharptail grouse.
- Develop habitat in a corridor from the Indian River through the area west of Triangle Lake to Road 440.
- Develop pine marten habitat in a corridor from the Indian River through the area around Dinner, Rumble, Rim and Hub Lakes to County Road 440.
- Develop pine marten habitat in both corridors.
- Develop pine marten habitat throughout entire area.

EVALUATION CRITERIA:
- Continuous habitat with 40 percent conifers.
- Maximum of 70 percent of the area interconnected.
- Acres of interconnected habitat provided.

3. LOONS VS. PEOPLE AT RIM LAKE - Increased human disturbance at Rim Lake may displace nesting loons. Rim Lake is one of two trout lakes in the Iron Jaw Area; as such, it has the potential to sustain significantly increased fishing pressure, should access be improved or intensity of fisheries management be increased. Retention of the nesting loons at Rim Lake is critical to achieving the Forest's goal of 17 pair of nesting loons. cluded habitat required by the loon is consistent with the semiprimitive setting.

POTENTIAL SOLUTIONS:
- Change fishery from trout to warmwater species.
- Institute trophy fishing regulations.
- Do no fish habitat or population manipulation.
- Close Rim Lake to fishing during loon nesting season.
- Close the trail to Rim Lake during loon nesting season.
- Restrict boat/canoe access to carry-in.

EVALUATION CRITERIA:
- Recreation use level greater than, or less than, current.

4. OWNERSHIP: Privately owned land existing within the area may be in conflict with achievement of semiprimitive values. Compartment 30 lands are outside the "logical" Iron Jaw Area Boundary lands (west of FR 2258) are extensively intermixed with private ownership. Management/administration of these lands is inefficient and costly. NOTE: Due to its similar terrain and proximity, the compartment 30 area (see map at back of package) was initially considered for inclusion in the analysis of the Iron Jaw Area.

POTENTIAL SOLUTIONS:
- Exchange away land on Straits Lake.
- Acquire full ownership around Mike White and Toms Lake.
- Exchange away all lands west of FR 2258.
- Fully manage/administer/maintain compartment 30 lands.
- Acquire the privately owned 80 acres in the southeast corner of opportunity area.
- Acquire private lands adjacent to FR 2257.

EVALUATION CRITERIA:
- Acres consolidated within area.
- Acres disposed of west of FR 2258.

NOTE: Further consideration of private ownership and of the compartment 30 area was not undertaken. Recommendation to management is for further study of the area as a specific project.

5. GRAVEL - There is potential conflict between gravel extraction and the semiprimitive recreation setting. There is potential to develop gravel resources in the area. Land disturbance caused by extraction may significantly conflict with semiprimitive values.

POTENTIAL SOLUTIONS:
- Do not develop gravel resource.
- Develop gravel pits during timber sale activities and stockpile material off-site.
- Re-route recreationists away from gravel pits.
- Seasonal use only, to avoid conflict with recreation.
- Rehabilitate gravel pits to recreation/wildlife uses.

EVALUATION CRITERIA:

- NOTE: This problem was dropped from further consideration. District Ranger input revealed that adequate gravel could be obtained nearby for the foreseeable future. Therefore, no gravel pits will be developed within the Iron Jaw Area.

6. RIPARIAN RECREATION ACCESS: Boat, canoe and angler use has damaged lake and river access sites. Fish habitat, visual quality and riparian area stability have been degraded by accelerated erosion and sedimentation. Damage has occurred at both designated and undesignated sites. Degraded sites are visible signs of human activity which are inconsistent with semiprimitive values.

POTENTIAL SOLUTIONS:

- Harden access points (must meet semiprimitive values).
- Stabilize eroding banks.
- Close access points showing extreme damage.
- Change boat/canoe launches from drive-in to carry-in.
- Relocate access sites allowing natural recovery.
- Provide educational (interpretive materials) at access points to encourage user sensitivity to damage.

EVALUATION CRITERIA:

- Visual impact.
- Separation of access and roads from campsites to reduce user impacts and interactions.
- Distance to carry boat (not farther).

7. RECREATION EXPERIENCE - The quality of the recreational experience is reduced when campsites are adjacent to vehicular travelways and water access points. Campers are exposed to disturbance levels and evidence of human activity which is inconsistent with semiprimitive motorized objectives. Multiple activities (camping, boat launching, parking areas) damage the fragile sites common to this area. Visual quality is degraded.

POTENTIAL SOLUTIONS:

- Relocate campsites away from roads, boat/canoe launching sites, and parking areas.
- Provide campsites accessible by water or trails.

- Provide no vehicular access to water by restricting all boat/canoe launching to carry-in.

EVALUATION CRITERIA:

- NOTE: This problem was dropped from further analysis. The degraded conditions need to be resolved as a priority matter, regardless of the alternative selected. The analysis team recommended separation of boat, road, and camping sites. Surface disturbance and associated problems must be corrected.

8. CONFLICT AMONG SEMIPRIMITIVE AREA USERS. There are conflicts among users of the area. Semiprimitive motorized means different things to different people. Some expect to tent camp away from the sight and sounds of others, while others expect to camp in motor homes. The levels and types of use may conflict with user expectations.

POTENTIAL SOLUTIONS:

- Move campsites so they are not visible from the water.
- Restrict types of vehicles by permit system at sites.
- Reduce the number of sites accessible from one road.
- Disperse more sites throughout the length of roads, reducing the number of sites at the terminus.
- Provide drive-in campsites at specified lakes.
- Separate day-use (boat launches) from campsites.
- Reduce length of stay at some or all sites.
- Eliminate motorized access to waterfront sites.
- Provide canoe-in/hike-in campsites.
- Provide a net increase in the number of campsites.
- Require permits for all campsites.
- Provide educational/interpretive material at sites, informing the public of what semiprimitive motorized is and where other recreation experiences may be found.

EVALUATION CRITERIA:

- Recreation experience diversity provided.
- Numbers and dispersion of campsites.
- Numbers of canoe/motorboat sites.
- Types of recreation activities.
- Miles of roads for all terrain vehicles.
- Miles of hiking/horse/mountain bike trails.
- Miles of snowmobile trails.
- Number (name) warmwater fishing lakes.
- Number (name) coldwater fishing lakes.

9. RIVER BANK EROSION - FR 2257 is too close to the Indian River. The proximity of the road to the river encourages creation of camper and angler user-developed sites and the over-use of specific sites. Bank erosion and general site degradation result. Traffic on FR 2257 and along the many spur roads to the river result in an excessive number of user access points to the river. Quality of the recreation experience available to users canoeing or hiking through the river corridor is reduced. Accelerated erosion and sedimentation degrades the river's fish habitat, including spawning habitat for the lake sturgeon, a Michigan Threatened Species.

POTENTIAL SOLUTIONS:
- Relocate the west end of FR 2257 to FR 2166.
- Close all spur roads between FR 2257 and the River.
- Close all of FR 2257.
- Close FR 2257 from its mid-point west to FR 2258.
- Close FR 2100 on south side of the Indian River.
- Shorten all spur roads from FR 2257 to the River.
- Reduce the speed limit on FR 2257.
- Lower the standard of FR 2257 (to a 2 rut road).
- Relocate both the east and west ends of FR 2257.

EVALUATION CRITERIA:
- Projected number of users.
- Sand deposited in river and area of unstabilized bank.
- Maintains access to private lands north of Iron Jaw.

10. CONFLICT BETWEEN TIMBER MANAGEMENT AND RECREATIONAL USERS

There is concern/perception that proposed timber harvesting in this semiprimitive motorized area causes the area to be no different from any other management area on the Forest. The Forest Plan proposed intensity and volume (1227 acres/8 million board feet in the next 12 years) of timber harvest could delay achievement of a semiprimitive environment because of the continual noise, vehicles, roads used, road standards and sights of harvesting and post-harvesting.

POTENTIAL SOLUTIONS:

- Enter the area for timber harvest on a 20-year schedule.
- Enter the area for timber harvest on a 30-year schedule.
- Enter the area for timber harvest on a 40-year schedule.
- Allow no timber harvest.
- Allow no timber harvest beyond current planned entry.
- Thin large red pine stand to alleviate "row-look"; cut for sharptail grouse habitat.
- Proceed with current (1986-1996) timber sale plans.
- Delay 1988 sale plans by five or more years.
- Delay 1988 sale until recreation network is in place.
- Complete planned sales (1986-1996) at one entry.
- Harvest selected areas at specific times (isolate activities within the area).

EVALUATION CRITERIA:

- Period (duration) of time harvesting conducted.
- Sense of semiprimitive feeling (including sights and sounds).
- Area where harvesting occurs.
- Time of year of harvest.
- Continuity (size of harvest area).
- Manner (silvicultural system and visual mitigation).

11. TOO MANY OPEN ROADS - Unmanaged all terrain vehicle use and access on "closed" roads and user developed trails causes user conflict and resource damage. Recreational users may not expect all-terrain vehicle traffic in "their" secluded setting. All-terrain vehicle users have developed a trail on a hill near Swan Lake. Fragile sands are eroding in the "trail" area as a result of vehicle use.

POTENTIAL SOLUTIONS:

- Provide no trails for all terrain vehicles (ATV).
- Control ATV use within the area.
- Prohibit ATV use on roads.
- Provide roads/trails for ATV use in the snow season.
- Provide roads/trails for snow-free ATV use.

EVALUATION CRITERIA:

- NOTE: Providing motorized recreation use is a criteria evaluated under PROBLEM 8. This is an enforcement issue; the problem of law enforcement and administration of regulations does not vary by alternatives but must be dealt with regardless of this analysis. No further analysis was undertaken on this problem.

12. NUMBER OF ROADS BEING DRIVEN - Some road closures are ineffective, and access is not reduced. Current levels of vehicular traffic on closed roads cause the loss of a sense of remoteness and conflicts between vehicles, hikers and bicycles. Barriers are removed, destroyed or damaged, causing environmental damage and increasing administrative costs.

POTENTIAL SOLUTIONS - EVALUATION CRITERIA:

- NOTE: All solutions formulated focused on law enforcement and are deferred to administrative resolution.

13. ROAD STANDARD CONFLICTS - Interior roads may not be constructed to standards appropriate to the semiprimitive motorized environment. This situation promotes user conflict. Roads designed to a standard which accommodates timber harvest may conflict with recreation user expectations of a more primitive-type road, and may provide for more users and vehicles in the area than is consistent with semiprimitive values and/or setting.

POTENTIAL SOLUTIONS:

- Use seasonal road closures.
- Employ road design standards which encourage specific types/levels of use.
- Restrict types of vehicles using specific roads.
- Obliterate closed roads and/or convert them to trails.
- Relocate roads.
- Design roads to accommodate a range of uses.
- Assure design compatible with semiprimitive setting.
- Design roads to meet timber harvest objectives (recognizing possible inconsistency with semiprimitive values).
- Design maximum economy roads (recognizing possible inconsistency with semiprimitive values).

EVALUATION CRITERIA:

- Number of miles of roads open for all vehicle use.
- Follow standards and guidelines for road design.

14. COUNTY ROAD 440 - The planned reconstruction of County Road 440 may adversely affect the semiprimitive recreation setting of the area. Additional traffic and higher speeds will bring more users to the area, will create more noise and will increase hazards to some wildlife species. A high standard road in this location is inconsistent with the goal of extending the pine marten range to the south.

POTENTIAL SOLUTIONS:

- Do not reconstruct County Road 440.
- Reconstruct County Road 440 to existing speed.
- Reconstruct County Road 440 to a lower speed.
- Reconstruct County Road 440 as proposed.
- Reconstruct only the west 3.1 miles of County Road 440.

EVALUATION CRITERIA:

- Miles not reconstructed.
- NOTE: Team recommendations for County Road 440 were to reconstruct only the western 3.1 miles (which do not border the Iron Jaw Area). Further transportation analysis is needed on County Road 440, to determine possible traffic impacts on the semiprimitive area. Therefore, resolution of the issue is deferred to management.

ITEMS CONSIDERED IN ALL ALTERNATIVES:

Botany

Botanical surveys will be conducted (in areas of sensitivity) prior to implementation of activities which would disturb protected plant communities. Protective measures will be taken as needed.

Cultural Resources

Surveys will be conducted prior to implementation of any earth disturbing activities. Campsites and trails will be relocated away from cultural resource sites, except for the purpose of interpretation, which will be provided at a minimum of one historic and one prehistoric site. Protective measures will be taken as needed.

Fisheries

The sport fisheries resource is a part of recreation activities and is therefore considered in all options. Greater needs (such as loon or eagle forage and habitat) will be met first.

Minerals

Leases and applications for leases of gas, oil, coal and minerals will be subject to implementation restrictions as defined in the Forest Plan standards and guidelines.

Sharptail Grouse

Sharptail grouse management will be undertaken in the existing 200-acre opening in the northwest corner of Iron Jaw. This decision follows through all alternatives. Further vegetative

manipulation for sharptail grouse management varies by alternative.

Trails and Trailhead Parking

A network of trails is provided for in all alternatives. Facilities for trailhead parking are understood as built-in with planned trails. Planning for both trails and trailhead parking areas will ensure environmentally sound locations. User-developed trails or parking areas may not be consistent with multi-resource objectives.

ALTERNATIVE FORMULATION:

Seven alternatives were developed using the issues, concerns and opportunities described by the 14 previously listed "PROBLEMS". The alternatives developed were intended to provide a range within the semiprimitive motorized class. The continuum of alternatives would vary on a scale from semiprimitive non-motorized, to roaded natural. By providing a range of alternatives which fell within the Recreation Opportunity Spectrum guidelines of semiprimitive motorized, selection of the preferred alternative could tailor future management to fit the specific qualities of the Iron Jaw Area.

Alternatives A to G were defined by both mapping and listing specifications of management activities required to address problems. The specifications of each alternative have been noted as KEY POLICIES and are found in APPENDIX F. Maps of the road, campsite and trail systems of each alternative are also found in APPENDIX F.

Several of the 14 PROBLEMS were similar in nature. In the process of mapping and developing potential solutions, many solutions were discovered to resolve other problems as well. For these reasons, all 14 PROBLEMS were addresred by 7 final evaluation criteria. These key evaluation criteria are:

1. PINE MARTEN HABITAT (acres of continuous habitat)
   Includes Problems 1, 2

2. EAGLES (reduction in amount of recreation use in nesting season)
   Includes Problems 1, 2, 3

3. ENTRY SCHEDULE FOR TIMBER (sense of semiprimitive)
   Includes Problem 10

4. RECREATION EXPERIENCE DIVERSITY INDEX (A - dispersion of campsites; B - miles of roads/trails for ATV; C - miles of hiking/horse/mountain bike trails; D - miles of snowmobile trails; E - number of canoe/boat access sites; F - number/name coldwater fish lakes)
   Includes Problems 6, 7, 8, 11

5. TRAFFIC ALONG NORTH SIDE OF RIVER (Number of motorized access sites)
   Includes Problem 9

6. VEHICLE ACCESS FOR THE ENTIRE AREA (Miles of roads open for vehicles)
   Includes Problems 3, 11, 12, 13

7. COST TO MEET OBJECTIVES (Estimated annual cost) This final evaluation criteria was added toward the end of the analysis rather than earlier, where it may have influenced activities planned.

Original Problems (partial or in full) which were remanded to management as concerns are:

- 4 - Ownership
- 5 - Gravel
- 7 - Degraded Sites
- 12 - Law Enforcement
- 14 - County Road 440

Alternatives A through G were evaluated against the 7 final evaluation criteria using the Choosing By Advantages method of decisionmaking (see Figure IV-1, page 34). A brief description of the Choosing By Advantages procedure is as follows:

1. The advantage of each alternative is decided first. Advantages are numerical or non-numerical rankings of the particular alternative within each of the 7 evaluation criteria factors. For example: Alternative advantages for the Pine Marten criteria were a numerical ranking by the acres of desirable habitat provided. The more acres of habitat above and beyond the lowest acreage of any alternative, the higher the advantage ranking.

2. The paramount advantage is then decided from among the 7 evaluation criteria factors. Criteria 4-A (recreation diversity - dispersion of campsites) was considered the paramount advantage. An "Importance of Advantage" rating of 100 was given as the paramount advantage score. This criteria was chosen as the paramount advantage because dispersion of campsites was considered the essential factor to the semiprimitive experience.

3. The next step is to compare and rate every other advantage against the paramount advantage. Example: The 4-A Recreation criteria was paramount and rates as 100. Comparing 4-A with criteria 1-Pine Marten habitat (advantage of 3050 acres) is 60 percent as important as the ranking (9) of dispersion of campsites in the paramount (100 points) advantage.

   At this step the decisionmaker inserts the appropriate viewpoint from the problem analysis process, and thereby

introduces subjective evaluation with the objective analysis of ranking advantages. The charting and citing of the advantage points are the objective analysis. Assigning importance to advantages is introducing the subjective portion of the analysis process. In this way, the manager's perceptions or "gut-feelings" are considered in decisionmaking.

4. The preferred alternative is then selected by the highest total of "Importance of Advantage" points.

Figure IV-1 (next page) shows the Choosing By Advantages ranking of alternatives.

FIGURE IV-1

CHOOSING BY ADVANTAGES RANKING

	A	B	C	D	E	F	G	H
1. PINE MARTEN HABITAT								
Acres of Continuous Habitat	5,550	5,550	3,900	3,900	2,500	3,900	5,550	5,550
Advantage	3,050	3,050	1,400	1,400	0	1,400	3,050	3,050
Importance of Advantages	60	60	28	28	0	28	60	60
2. EAGLES - Reduction in Amount of Recreation Use in Nesting Season	Very Good	Great	Very Good	Very Good	Bad	Great	Poor	Very Good
Advantage	11	14	10	10	0	14	3	11
Importance of Advantages	47	60	43	43	0	60	13	47
3. ENTRY SCHEDULE FOR TIMBER								
Sense of Semiprimitive	8.5	8	3	7	9	7	5.5	8.5
Advantage	5	5	0	4	6	4	2.5	5
Importance of Advantages	64	58	0	47	70	47	29	64
4. RECREATION EXPERIENCE DIVERSITY INDEX								
A. Dispersion of Campsites	1	2	5	1	10	4	5	1
Advantage	9	8	5	9	0	6	5	9
Importance of Advantage	100	89	56	100	0	67	56	100
B. Miles of Roads/Trails for ATV (OHV)	0	0	5	0	0	0	15	5
Advantage	0	0	5	0	0	0	15	5
Importance of Advantage	0	0	27	0	0	0	80	27
C. Miles of Hiking (horse, mountain bike) Trails	15	15	15	12	5	12	10	15
Advantage	10	10	10	7	0	7	5	10
Importance of Advantage	80	80	80	56	0	56	40	80
D. Miles of Snowmobile Trails	7	0	7	12	0	8	27	13
Advantage	7	0	7	12	0	8	27	13
Importance of Advantage	41	0	21	36	0	24	80	39
E. Number of Canoe/Boat Access Sites	6	2	7	5	13	2	5	6
Advantage	5	0	5	5	0	0	5	5
Importance of Advantage	90	0	90	90	0	0	90	90
F. Number/Name Coldwater Fish Lakes	2	2	2	1	2	2	2	2
Advantage	1	1	1	0	1	1	1	1
Importance of Advantage	90	90	90	0	90	90	90	90
5. TRAFFIC ALONG NORTH SIDE OF RIVER								
Number of Motorized Access Sites	3	3	3	4	16	3	6	3
Advantage	13	13	13	12	0	13	10	13
Importance of Advantage	90	90	90	83				90
6. VEHICLE ACCESS FOR ENTIRE AREA								
Miles of Roads Open for Vehicles	16	13	16	14	16	12	22	16
Advantage	6	9	6	8	6	10	0	6
Importance of Advantage	42	63	42	56	42	70	0	42
7. COST TO MEET OBJECTIVES								
Estimated Annual Cost - Maintain Desired Future Cond.	Med	Low	Med	Med	Least V-Low	Fairly High	High	Med
Advantage	3	4	3	3	5	0	0	3
Importance of Advantage	18	24	13	18	30	0	0	18
Total of "Importance" Points	702	614	607	585	557	540	232	729

"H" differs from A

48 - add 5 miles ATV
40 - add 6 miles snow

2257 - obliterate west end and east end loop to 2451 and logging road north of Little Island Lake

Using the Choosing by Advantages method, Alternative A ranked the highest. Miles of all-terrain vehicle trails and miles of snowmobile trails were two recreation activities which ranked higher in other alternatives than they did in Alternative A. These options could be readily added to Alternative A, resulting in an increase in the "Importance of Advantage" ranking and increasing the recreation opportunities available. A few wildlife and remoteness factors ranked higher in other alternatives, yet could not be added to Alternative A without the result being a net decrease in alternative ranking.

The final, preferred alternative, Alternative H, was formulated by adding 5 miles of all-terrain vehicle trails and 6 miles of snowmobile trails to Alternative A. In addition, FR 2257 was located differently in Alternative H than in the other alternatives. Location of the road was changed to a new combination of previously suggested options.

THE PREFERRED ALTERNATIVE:

The preferred alternative presents a comprehensive Iron Jaw Area management plan which provides for a variety of resources and recreation opportunities and retains the semiprimitive motorized setting. Alternative H, the preferred alternative, contains the following features as related to meeting the final evaluation criteria:

1. PINE MARTEN HABITAT - 5550 acres of continuous habitat are to be designated and developed. This habitat totals three fourths of the entire Iron Jaw Area and exceeds the minimum Forest Plan

requirement of 70 percent. The remote, more-secluded habitat required by the pine marten is also beneficial to wildlife species and people seeking seclusion. Development of an older forest is in harmony with achieving the desired semiprimitive setting. Natural succession will slowly increase the conifer component within specific stands and within the area in general. Different heights, species and naturally fallen trees will cause the forest to evolve visually to a setting which appears less influenced by humans.

Larger, older white pine and hemlock, particularly in riparian areas, will contribute to the old growth component and form desirable habitat for species such as the black bear, bobcat, gray squirrel, porcupine, raccoon, pileated woodpecker and the black-throated green warbler.

2. EAGLES - Campsite location, the amount of motorized use, development of old growth and designation of pine marten habitat all contribute to a rating of 'very good' for future eagle habitat.

Stands designated for old growth will also contribute to development of future super-canopy trees needed for eagle nesting. The seclusion and lack of disturbance around water bodies may encourage increased nesting activities by loons.

Rough fish (suckers, bullheads) will be managed in Dinner, Spud and Hub Lakes, specifically for eagle forage.

3. ENTRY SCHEDULE FOR TIMBER - Timber harvest planned under this alternative includes thinning approximately 300 acres of red pine plantation. Thinning will help achieve a more natural appearing stand by reducing the artificial row look of the plantation and developing height and tree species diversity. Approximately 100 acres of clearcutting and shelterwood harvests designed to develop and enhance sharptail grouse habitat are also planned. Entry schedule for timber harvest activities will be one sale entry into the entire area every 20 years.

Harvesting activities will be scheduled in the low recreation use season, with all individual unit harvesting to be completed in three years. Restricted duration and timing of cutting will keep human impacts to a minimum. Areas to be harvested are not immediately adjacent to high use areas (lakes) but may be easily encountered by exploring recreationists. Seasonal restrictions and visual mitigation measures (as displayed in the Forest Plan standards and guidelines) will help retain the semiprimitive environment as much as possible. Interpretive signing will be used to explain forest management activities to forest visitors.

Openings created for sharptail grouse will provide upland habitat for sandhill crane and white-tailed deer. Recreationists may use these areas for wildlife viewing and berry picking.

4. RECREATION EXPERIENCE DIVERSITY INDEX - Recreation sites planned are more dispersed throughout the area. Dispersed use will reduce noise levels and the visual influence of other users. Reduced visual and physical interaction, as well as the big tree

environment, will contribute to the achievement of a more remote setting. Opportunities for individualized, challenging recreation activities will be enhanced by this environment.

The dispersion of drive-in, hike-in, canoe-in campsites, miles of motorized trails, nonmotorized trails, snowmobile trails, canoe/boat access sites and overall fisheries management provides a wide variety of recreation opportunities. Separation of day use sites from campsites reduces the conflict between users yet allows for the various user groups to find the experience they seek (39). Relocation and rehabilitation of sites alleviates the degraded visual condition. Separation of sites will allow for an increase in the number of sites, accommodating a moderate increase in recreation use (19, 28).

Swan Lake, Lake Nineteen and Triangle Lake will have drive-in boat accesses. Iron Jaw and Verdant Lakes will have portage accesses. Access to all other lakes will be walk-in or carry-in. Drive-in access to the Indian River will be provided at 5 sites. Swan Lake will be managed for both warmwater and coldwater fisheries. Lake Nineteen will be managed for trout, as will Rim Lake. Access to Rim Lake will be restricted during loon nesting season.

Several miles of trails will be available for hikers, horses and snowmobiles. Specific snowmobile trails total 6 miles, while an all-terrain vehicle trail of 5 miles is provided.

5. TRAFFIC ALONG NORTH SIDE OF RIVER - By relocating approximately 2 miles of each end of Forest Road 2257, the immediate problem of over-use along the river is resolved.

Reduced vehicle use will increase canoeists' feelings of remoteness by removing the noise of vehicles. Canoe-in campsites will be provided. Overall, the remote setting of the Iron Jaw Area will be enhanced because of the elimination of a road "border" surrounding the area.

Closure and rehabilitation of the degraded access sites and eroding sand river banks will reduce the sand bedload of the Indian River. Reduction of the sand bedload will increase cobble and gravel spawning habitat available for trout and lake sturgeon.

6. VEHICLE ACCESS FOR THE ENTIRE AREA - Open road mileage within the area is reduced. Access is continued for three popular recreation lakes: Swan, Triangle and Nineteen. Yet reduced total access provides for more seclusion and reduction in user conflict (29). Fewer roads are conducive to the success of the trail network planned. Isolation and remoteness contribute to the semiprimitive condition.

A specific all-terrain vehicle trail will be provided for snow-free season use. Snow-season use will be allowed on the open road network and on a specified trail.

Roads closed to motorized use will be converted to trails or obliterated by an activity such as disking and seeding. Open roads will be maintained in a condition which allows use for car or pickup truck driving and mountain bicycle riding.

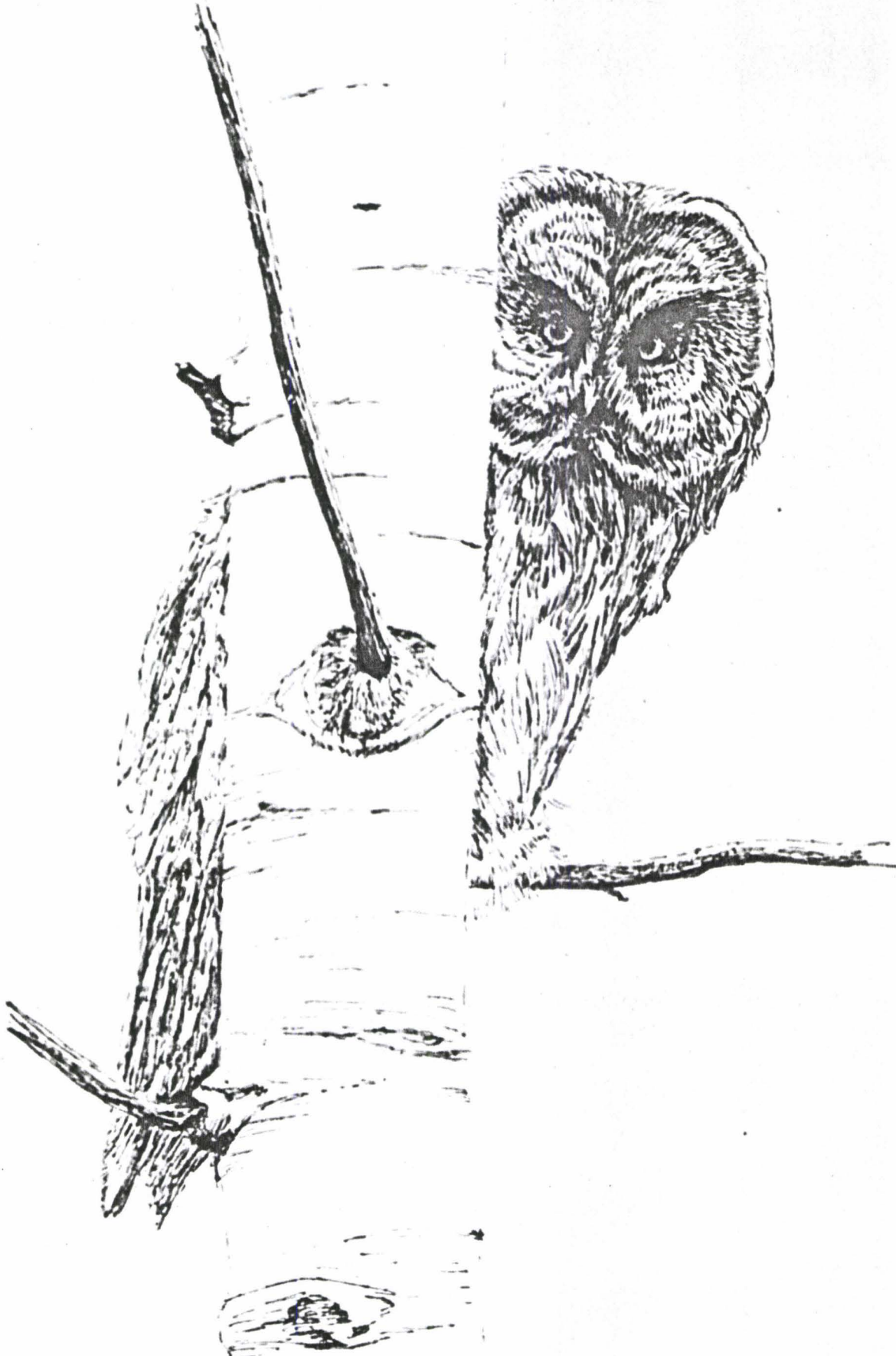
7. COST TO MEET OBJECTIVES - Local recreation, wildlife/sports, environmental and public service groups have recently participated in or expressed interest in assisting the Forest Service in construction of facilities. These groups will be canvassed to elicit support in implementation of Iron Jaw Area plans, thereby reducing direct costs in management of recreation improvements and improving public involvement in National Forest management.

The concept of cost effectiveness in recreation management calls for planners to consider the product of the recreation program. This consideration was a part of the cost-efficiency analysis performed in the Final Environmental Impact Statement of the Forest Plan. Here, objectives (outputs) for recreation were determined. Costs are an important constraint but should be guided by the objectives of the recreation program not just the cost of constructing the facility to provide the recreation activities (45). These objectives are often judgments based on public and political pressures and are often controlling factors in decisionmaking for recreational programs (42).

In order to provide more meaningful economic analyses, greater emphasis is needed in measuring the supply and use provided by semiprimitive areas. Methods are needed to determine the beneficiaries' share in the cost of the activity (18).

A list of activities considered under the "Cost to Meet Objectives" criterion is found in Appendix G - Projects Required for Preferred Alternative. Implementation of the Preferred Alternative was ranked as medium in cost as compared to the other alternatives. Attainment of the desired semiprimitive motorized

condition through setting and recreation opportunities was foremost in development of a management plan for the Iron Jaw Area; therefore, cost was added as an evaluation criteria toward the end of the analysis rather than earlier where it may influence appropriateness of activities.



CHAPTER V SUMMARY

CHAPTER V - SUMMARY

THE IRON JAW MANAGEMENT PLAN:

The problem of managing a variety of resources yet retaining and enhancing semiprimitive motorized recreation values has been solved in the preferred management alternative. The preferred alternative (Alternative H) presented for management of the Iron Jaw Area represents the optimum mix of impacts and influences the area can absorb, while still providing the setting, opportunity and experience levels for a semiprimitive motorized area. Amount and scale of impacts represented are limited so they will not affect the environment to the point of losing the semiprimitive atmosphere. The plan includes all activities to be undertaken in the next 20 years. Administrative activities will be ongoing.

The preferred alternative presents a solution for the problem of managing a variety of resources while retaining and enhancing a semiprimitive setting, opportunity and experience. Presenting a plan specific to Iron Jaw, however, merely solves this particular problem at this particular time. Semiprimitive motorized concepts are inherent in the Iron Jaw Area plan and cannot be singularly separated.

SEMIPRIMITIVE MOTORIZED CONCEPTS:

Refining understanding of semiprimitive motorized management as addressed in this paper, cannot be completely separated from the Iron Jaw management plan. Semiprimitive concepts were included throughout the analysis process and were often refined in specific instances through and by solution of problems.

The semiprimitive motorized concept is perceived differently by different people. Managers and researchers have studied various means of describing, cataloging, measuring and planning for the recreation activities and opportunities of others. By categorizing and managing, the unique personal aspect can be lost. Yet simply explaining the concepts of semiprimitive does not provide the example or land base with which one can relate those concepts. It is imperative that the concepts are not only understood, but are practiced.

Use and understanding in implementation of the Recreation Opportunity Spectrum are low. In the past four years, approximately two days of training in the Recreation Opportunity Spectrum has been presented to resource managers across the Hiawatha Forest. This training has come in several parts, at Management Team meetings, and during a Forest Recreation Workshop. Training has also occurred during the mapping of sensitivity levels for lakes, streams and roads while preparing the Forest Plan. A Recreation Opportunity Spectrum training video tape is also available, but has not been widely viewed.

The Forest Plan management direction allows sufficient latitude to implement projects in conformance with the Recreation Opportunity Spectrum. Standards and guidelines outline practices that are acceptable or restricted in semiprimitive motorized areas. However, without willingness, working knowledge, and a chance to apply the principles of the Spectrum, objectives will not be achieved.

The most significant aspect of implementing the Recreation Opportunity Spectrum concepts is that of attempting to manage a feeling or experience. Semiprimitive area users, those for whom managers are providing opportunities for experiences, have immersed their being in the atmosphere of the area. Users contacted most often described their feelings as follows:

"It's so beautiful and peaceful,"

"I love the quiet, and being alone with people I love in a wonderful place."

"I go there for the tranquility."

As managers, we have been trained to think in outputs and targets, in regulated forest land and road service levels, in vegetative manipulation and facilities. Yet with this technical background, we are attempting to define and manipulate an environment which touches the soul.

The standards and guidelines of the Forest Plan portray a difference in semiprimitive motorized management from that of similar northern hardwood dominated areas. However, those differences are primarily management technique differences. To those managing a resource, often the most visible and influential force is the process used in developing a management scheme. At times, the principles which management is attempting to attain may be overlooked. Development of the Forest Plan standards and guidelines appears to have focused on management differences. The principles and philosophy of the Recreation Opportunity Spectrum have not been reflected in the standards and guidelines.

For example: In vegetatively similar Management Area 2.2 (uneven-aged northern hardwoods with high recreation and wildlife considerations), 75 percent of the northern hardwoods are to be managed with the uneven-aged system, and 90 percent uneven-aged management in Management Area 6.2 (semiprimitive motorized). Up to 40-acre openings are allowed in Management Area 2.2 and up to 25-acre openings are allowed in 6.2. No guidelines exist for the contiguous size of timber harvest allowed. Thinnings or selection cuts could conceivably range from 10 acres to well over 1,000 acres. Semiprimitive motorized areas are included in the regulated forest land base.

To a forest manager these management practice differences are apparent. Yet from a user point of view, a 25-acre clearcut may look no different than a 40-acre clearcut. The 15 percent difference in uneven-aged/even-aged hardwood management will not be apparent unless the user knows every stand in the area. Contributing to this lack of difference is the age of the forest. The young hardwood forest is primarily even-aged; significant changes in stand structure will not be obvious to an untrained eye for approximately 30 years.

Forest Plan open road densities may vary from 1 to 1.5 miles per square mile more in general forest hardwood areas than in semiprimitive motorized areas. Yet road densities by themselves do not ensure a semiprimitive setting or experience. Total road densities are significant to the overall use and access of a semiprimitive area, however, densities do not provide a good measure. A user who stays on roads is unaware of the number of

roads which are out of sight, particularly if the existing roads do not intersect. Trails are located in order to avoid roads as much as possible; therefore, trail users may not be aware of open road densities. The challenge to the validity of road densities as a measure of the semiprimitive environment can be taken further. One concept which emerged during the analysis, regarding road densities, addressed the distance travelled to reach a campsite. Rather than attempting to keep a low road density with fewer and shorter roads, perhaps a greater feeling of remoteness and isolation could be achieved by driving a longer distance. A road winding through the woods for several miles before reaching the campsite may provide the user with a real feeling of remoteness. By the time they have arrived at the campsite, they feel like they have truly gone "deep-in-the-woods."

Standards and guidelines of the Forest Plan allow for management of the Iron Jaw Area in a manner consistent with the Recreation Opportunity Spectrum. However, the standards and guidelines do not give adequate direction to a forest manager who has not practiced or is not well-schooled in the Recreation Opportunity Spectrum.

CONCLUSIONS:

A. The Iron Jaw Area Management Plan

The preferred alternative in managing the Iron Jaw Area should be adopted as the management strategy. The problem of presenting opportunities to develop, retain and enhance semiprimitive motorized recreation values in the Iron Jaw Area while managing a variety of resources, has been solved by the proposed plan.

B. Semiprimitive Motorized Concepts

Refining understanding of semiprimitive motorized management cannot be completely separated from a management plan (in this case the Iron Jaw Area plan). Semiprimitive motorized concepts were repeatedly included in the thought process throughout the analysis. In addition to the integration of concepts in the Iron Jaw plan, three related conclusions in addressing the problem of "What is semiprimitive motorized management?" are as follows:

1. Increase training in the Recreation Opportunity Spectrum system, and add practical experience to that training. The Recreation Opportunity Spectrum and User's Guide do not convey the philosophy and concepts used in building the spectrum. Training in the philosophy of the Recreation Opportunity Spectrum would serve to increase the knowledge, skills and sensitivities of Forest managers. Practical application would increase understanding of concepts and foster inclusion of both resources and feelings.

Adding more specific standards and guidelines to the Forest Plan may reduce obvious conflicts in resource uses. However, not doing something wrong doesn't ensure that what does need to be done will be done right. Thorough knowledge of the Recreation Opportunity Spectrum system is needed to enable understanding and incorporation of concepts into management of a forest. Knowledge of the system is also needed to develop means of communicating with the public. Greater communication with the public is needed

regarding public contact and marketing of the forest in general (23, 27, 30). Before we can effectively deal with the public on the semiprimitive issue, we must understand what semiprimitive motorized recreation opportunities are.

2. Remove semiprimitive areas from the "suitable for timber production" land base (regulated Forest). Defining targets for board feet of timber produced in a semiprimitive motorized area only reinforces managing for measurable outputs. The objective of vegetative manipulation should be to achieve the desired condition for recreation, visuals, and/or vegetative diversity and wildlife, not to produce "X" amount of timber volume. Amount of timber produced should be the result of vegetative manipulation for a higher need, not a goal in which other resources are considered constraints which must be mitigated. It is difficult to manage vegetation for a recreation, visual or wildlife objective, but it is even more difficult when a timber volume target must also be attained.

3. Accept the change. Semiprimitive management is different from past forest management. Semiprimitive areas cannot be managed as "business as usual." We must include feelings as valid management concerns, especially in the areas we've intended to produce feelings and experiences. An experienced forest manager must take care to view the forest from the perspective of a user, not solely viewing as a manager. This is a difficulty which may be best portrayed with an analogy:

When encountering people and seeing them smile, a dentist may not see the smile but see only that the other persons teeth are in need of care. Both the intent and the beauty of the smile are lost because of thoughts of dental care. When managing a semiprimitive forest, we need to remember the smile, the good feeling we got from being in the woods, in the early days before we thought in words like "vegetative manipulation", "analysis of the management situation", "vertical diversity", "transportation service levels", "activity fuel treatment", "recreation visitor days", "or categorical exclusions". The non-manager appreciates the feeling of the woods because the feeling makes them smile.

IMPLEMENTATION

The preferred alternative presented for management of the Iron Jaw Area includes all activities to be undertaken in the next 20 years. Following approval by the Manistique District Ranger and the Hiawatha's Forest Supervisor, implementation should proceed as follows:

PUBLIC NOTIFICATION

- Publish a notice of selection of the Iron Jaw preferred alternative (in the same publications as previous Iron Jaw notices).
- Include information on the preferred Iron Jaw management plan in open house/public meetings within the next year.
- Include a request for information card and a brief newsletter in with response mailings to public requests (such as public information or camping permit requests). This method of public contact would allow people the option of expressing interest in specific areas.
- Post notices, similar to those mentioned above, on campground bulletin boards.
- Public groups and individuals who have expressed interest in the Iron Jaw Area should be contacted and given information on the Iron Jaw Plan.

PROJECT DESIGN

- Projects listed in Appendix G - (Projects required to implement Preferred Alternative) should be designed with the assistance of the respective resource specialists.
- Project implementation should occur as soon as possible. Labor sources should include those members of the public (wildlife/sports, environmental and public service group members) who have expressed interest and support for projects such as those within Iron Jaw.
- All projects should be accomplished within the next 20 years in order to meet the desired future condition for the Iron Jaw Area.

MONITORING

The purpose of monitoring and evaluation is to determine progress in meeting the objectives of the Iron Jaw Area management plan.

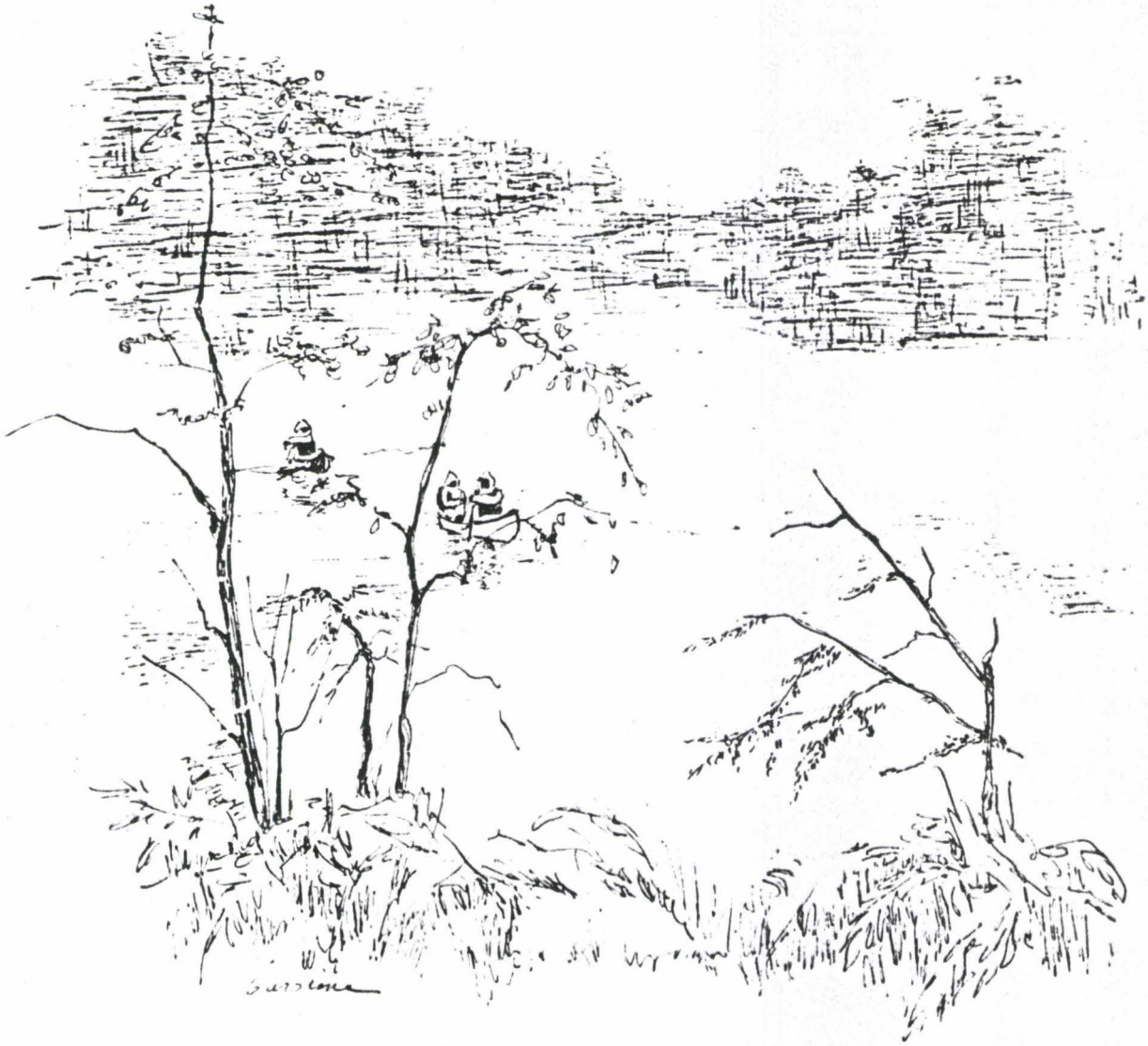
Monitoring is done to observe or record the results of actions. The process consists of collecting information from selected sources, on a sample basis. Information is used to determine whether:

- Forest Plan goals and objectives are being achieved.
- Management prescriptions are being applied as directed.
- The results of applying prescriptions address the management problems and issues, concerns and opportunities.
- Significant effects are occurring as predicted.
- Costs of implementing the Forest Plan are as predicted.

Two considerations determine monitoring requirements. They are: 1) Monitoring needs required by the NFMA, and 2) additional considerations found to be significant and linked to the resolution of the specific problems and issues of the Iron Jaw Area and the corresponding environmental effects. A full spectrum of data-collection techniques will be used, including:

- Site-specific observations by specialists.
- Field assistance trips by district and Supervisor's Office managers.
- General field observations.
- Formal management reviews on a scheduled basis.
- Discussions with general public users.
- Use levels determined through issuance of permits.
- Specific project monitoring to assure implementation of the project provides the desired condition or resolved the resource need.

The specific Iron Jaw Area monitoring program will be included as part of the Forest's Annual Program of Work, which includes details on the schedule of monitoring actions, specific locations, costs, and responsibilities.



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APPENDICES

RECREATION OPPORTUNITY SPECTRUM

While the goal of the recreationist is to obtain satisfying experiences, the goal of the recreation resource manager becomes one of providing the opportunities for obtaining these experiences. By managing the natural resource setting, and the activities which occur within it, the manager is providing the opportunities for recreation experiences to take place. Therefore, for both the manager and the recreationist, recreation opportunities can be expressed in terms of three principal components: the activities, the setting, and the experience.

For management and conceptual convenience possible mixes or combinations of activities, settings, and probable experience opportunities have been arranged along a spectrum, or continuum. This continuum is called the Recreation Opportunity Spectrum (ROS) and is divided into six classes (Figure 1). The six classes, or portions along the continuum, and the accompanying class names have been selected and conventionalized because of their descriptiveness and utility in Land and Resource Management Planning and other management applications.

Each class is defined in terms of its combination of activity, setting, and experience opportunities (Table 1). Subclasses may be established to reflect local or regional conditions as long as aggregations can be made back to the six major classes for regional or national summaries. An example of a subclass may be a further breakdown of Roaded Natural into subclasses based on paved, oiled, or dirt surfaced roads, which in turns reflects amount of use, or a further breakdown of Primitive based upon aircraft or boat use.

The Recreation Opportunity Spectrum provides a framework for stratifying and defining classes of outdoor recreation opportunity environments. As conceived, the spectrum has application to all lands regardless of ownership or jurisdiction. It's use in the National Forest System will facilitate the consideration, determination and implementation of the recreation management role.

Figure 1

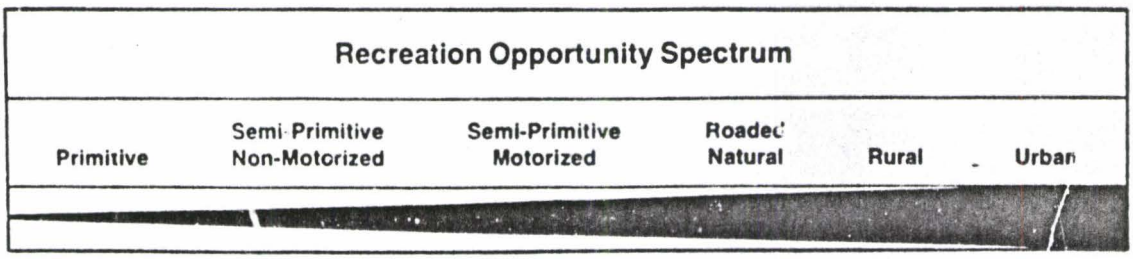


TABLE - 1

ROS
Activity Characterization*

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Land Based: Viewing Scenery Hiking and Walking Horseback Riding Tent Camping Hunting Nature Study Mountain Climbing	**Land Based:** Viewing Scenery Automobile (off road use) Motorcycle and Scooter Use Specialized Landcraft Use Aircraft Use Hiking and Walking Horseback Riding Camping Hunting Nature Study Mountain Climbing	**Land Based:** Viewing Scenery Viewing Activities Viewing Works of Human-Kind Automobile (includes off-road use) Motorcycle and Scooter Use Specialized Landcraft Use Train and Bus Touring Aircraft Use Aerial Trams and Lifts Use Hiking and Walking Bicycling Horseback Riding Camping Picnicking Resort and Commercial Services Use Resort Lodging Recreation Cabin Use Hunting Nature Studies Mountain Climbing Gathering Forest Products Interpretive Services	**Land Based:** Viewing Scenery Viewing Activities Viewing Works of Human-Kind Automobile (includes off-road use) Motorcycle and Scooter Use Train and Bus Touring Aircraft Use Aerial Trams and Lifts Use Hiking and Walking Bicycling Horseback Riding Camping Picnicking Resort and Commercial Services Use Resort Lodging Recreation Cabin Use Hunting Nature Studies Gathering Forest Products Interpretive Services Team Sports Participation Individual Sports Participation Games and Play Participation	
Water Based: Canoeing Other Watercraft (non-motorized use) Swimming Fishing	**Water Based:** Boating (powered) Canoeing Sailing Other Boating Swimming Diving (skin or scuba) Fishing	**Water Based:** Tour Boat and Ferry Use Boat (Powered) Canoeing Sailing Other Watercraft Use Swimming and Waterplay Diving (skin and scuba) Waterskiing and Water-Sports Fishing	**Water Based:** Tour Boat and Ferry Use Boat (Powered) Canoeing Sailing Other Watercraft Use Swimming and Waterplay Diving (skin and scuba) Waterskiing and Watersports Fishing		
Snow and Ice Based: Snowplay X-Country Skiing/Snowshoeing	**Snow and Ice Based:** Ice and Snowcraft Use Skiing, Downhill Snowplay X-Country Skiing/Snowshoeing	**Snow and Ice Based:** Ice and Snowcraft Use Ice Skating Sledding and Tobogganing Downhill Skiing Snowplay X-Country Skiing/Snowshoeing	**Snow and Ice Based:** Ice and Snowcraft Use Ice Skating Sledding and Tobogganing Downhill Skiing Snowplay X-Country Skiing/Snowshoeing		

*These activities (from RI M FSH 2309.11) are illustrative only. Specific additions or exception of activities within a ROS class may occur depending upon local forest situations.

ROS
Setting Characterization*

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Area is characterized by essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.	Area is characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Motorized use is not permitted.	Area is characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Motorized use is permitted.	Area is characterized by predominantly natural-appearing environments with moderate evidences of the sights and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.	Area is characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available.	Area is characterized by a substantially urbanized environment, although the background may have natural-appearing elements. Renewable resource modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans, on-site, are predominant. Large numbers of users can be expected, both on-site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site.

*This table is for descriptive purposes only.

ROS Experience Characterization*

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Extremely high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers a high degree of challenge and risk.	High, but not extremely high, probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk.	Moderate probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk. Opportunity to have a high degree of interaction with the natural environment. Opportunity to use motorized equipment while in the area.	About equal probability to experience affiliation with other user groups and for isolation from sights and sound of humans. Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities associated with more primitive type of recreation are not very important. Practice and testing of outdoor skills might be important. Opportunities for both motorized and non-motorized forms of recreation are possible.	Probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. These factors are generally more important than the setting of the physical environment. Opportunities for wildland challenges, risk-taking, and testing of outdoor skills are generally unimportant, except for specific activities like downhill skiing, for which challenge and risk-taking are important elements.	Probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. Experiencing natural environments, having challenges and risks afforded by the natural environment, and the use of outdoor skills are relatively unimportant. Opportunities for competitive and spectator sports and for passive uses of highly human-influenced parks and open spaces are common.

*These experiences are highly probable outcomes of participating in recreation activities in specific recreation settings.

Remoteness Criteria*

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
An area designated at least 3 miles from all roads, railroads or trails with motorized use	An area designated at least ½-mile but not further than 3 miles from all roads, railroads or trails with motorized use; can include the existence of primitive roads and trails if usually closed to motorized use.	An area designated within ½-mile of primitive roads or trails used by motor vehicles; but not closer than ½-mile from better than primitive roads.	An area designated within ½-mile from better than primitive roads, and railroads.	No distance criteria.	No distance criteria.

*The criteria can be modified to conform to natural barriers and screening, or other relevant features of local topographic relief and vegetative cover. This fits the criteria to the actual Forest landscape.

Size Criteria

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
5,000 acres*	2,500 acres**	2,500 acres	No size criteria.	No size criteria.	No size criteria.

*May be smaller if contiguous to Semi-Primitive Nonmotorized Class.
**May be smaller if contiguous to Primitive Class.

Evidence of Humans Criteria

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Setting is essentially an unmodified natural environment. Evidence of humans would be unnoticed by an observer wandering through the area.	Natural* setting may have subtle modifications that would be noticed but not draw the attention of an observer wandering through the area.	Natural* setting may have moderately dominant alterations but would not draw the attention of motorized observers on trails and primitive roads within the area.	Natural* setting may have modifications which range from being easily noticed to strongly dominant to observers within the area. However from sensitive** travel routes and use areas these alterations would remain unnoticed or visually subordinate.	Natural* setting is culturally modified to the point that it is dominant to the sensitive** travel route observer. May include pastoral, agricultural, intensively managed wildland resource landscapes, or utility corridors. Pedestrian or other slow moving observers are constantly within view of culturally changed landscape.	Setting is strongly structure dominated. Natural or natural-appearing elements may play an important role but be visually subordinate. Pedestrian and other slow moving observers are constantly within view of artificial enclosure of spaces.
Evidence of trails is acceptable, but should not exceed standard to carry expected use.	Little or no evidence of primitive roads and the motorized use of trails and primitive roads.	Strong evidence of primitive roads and the motorized use of trails and primitive roads.	There is strong evidence of designed roads and/or highways.	There is strong evidence of designed roads and/or highways.	There is strong evidence of designed roads and/or highways and streets.
Structures are extremely rare.	Structures are rare and isolated.	Structures are rare and isolated.	Structures are generally scattered, remaining visually subordinate or unnoticed to the sensitive** travel route observer. Structures may include power lines, micro-wave installations and so on.	Structures are readily apparent and may range from scattered to small dominant clusters including power lines, microwave installations, local ski areas, minor resorts and recreation sites.	Structures and structure complexes are dominant, and may include major resorts and marinas, national and regional ski areas, towns, industrial sites, condominiums or second home developments.

*In many southern and eastern forests what appears to be natural landscapes may in actuality have been strongly influenced by humans. The term natural-appearing may be more appropriate in these cases.
**Sensitivity level 1 and 2 travel routes from Visual Management System USDA Handbook 461

Social Setting Criteria*

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Usually less than 6 parties per day encountered on trails and less than 3 parties visible at campsite.	Usually 6 - 15 parties per day encountered on trails and 6 or less visible at campsites.	Low to moderate contact frequency. * *	Frequency of contact is: * * Moderate to High on roads; Low to Moderate on trails and away from roads.	Frequency of contact is: * * Moderate to High in developed sites, on roads and trails, and water surfaces. Moderate away from developed sites.	Large numbers of users onsite and in nearby areas.

*These criteria apply during the typical recreation use season. Peak days may exceed these limits.
* *Specific numbers must be developed to meet regional or local conditions.

Managerial Setting Criteria

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
On-site regimentation is low with controls* primarily off-site.	On-site regimentation and controls* present but subtle.	On-site regimentation and controls* present but subtle.	On-site regimentation and controls* are noticeable, but harmonize with the natural environment.	Regimentation and controls* obvious and numerous, largely in harmony with the man-made environment.	Regimentation and controls* obvious and numerous.

*Controls can be physical (such as barriers) or regulatory (such as permits).

APPENDIX B

Telephone Conversations

Telephone Conversations were held with 20 people who have camped in the Iron Jaw Area. Four hundred and four camping permits of up to 14 days each have been issued for the 10 permit-required campsites within Iron Jaw. Seventy-nine of those campers are multiple-year campers totalling 206 permits among them.

The following questions were asked with summaries of responses:

HOW DID YOU FIND OUT ABOUT THE AREA?

Most users camped in the area by reference from a friend or family member. Others "discovered" the area by being in the woods or "looking around."

WHAT DID YOU EXPECT TO FIND?

Those who had been told about the area expected "seclusion," "peace," "tranquility," "a beautiful place" and fishing. Those who discovered Iron Jaw on their own had no expectations.

DO YOU CAMP IN OTHER AREAS? WHAT KIND?

Campers who used tents or pop-up campers or truck campers camped in other, more remote, or undeveloped sites. They did not camp in campgrounds unless under time pressure of travelling. Most wanted secluded camping areas with water (lakeshores or rivers) and fishing opportunities. They preferred to drive to their campsites. Campers with recreational vehicles camped during more seasons of the year, travelled frequently and were either retired or were deer hunters.

ARE THERE USES OF THE FOREST WHICH AFFECT WHERE YOU CAMP? WHAT?

Most campers wanted quiet areas with few other people around them. They preferred waterfront sites. One appreciated the recent road reconstruction (they had torn out the undercarriage of their RV a few years ago) and three campers wished that the Forest Service had left the roads alone. Two campers objected to the sound of nearby chainsaws. All went to Iron Jaw because it was isolated and quiet.

HAVE YOU RETURNED TO CAMP AT IRON JAW LAKE, LAKE NINETEEN, SWAN LAKE OR TRIANGLE LAKE?

All but three had returned to camp in the area or intended to in the future.

WOULD YOU RETURN TO CAMP AT IRON JAW LAKE, LAKE NINETEEN, SWAN LAKE OR TRIANGLE LAKE?

One of three who would not return stated reasons of (one) Iron Jaw Lake had too many mosquitos because of the closed-in hardwoods (The campers preferred an area with more openness and breeze). The other two campers would not return because their campsite was also a boat launch (north end Swan Lake and Iron Jaw/Lake Nineteen). These people did not like the access at their site which brought other people, day and night.

HOW MANY PEOPLE CAMP WITH YOU? KIDS/AGE GROUPS (PRESCHOOL/HIGH/COLLEGE)

Most campers camped with family members or in groups with friends. Campers with children preferred Swan and Triangle Lakes because of swimming beaches. Campers at Iron Jaw/Lake Nineteen were drawn primarily for fishing opportun'ties. These campers came with "fishing buddies" of all ages.

HOW LONG WAS YOUR STAY?

All seemed to stay as long as they could. If they had only a weekend that's as long as they stayed. Others with a two-week vacation stayed the limit of their permit.

WHAT KIND OF CAMPING?

Three used recreation vehicles (2 retired, one a deer hunter); two used pick-up campers (anglers at Iron Jaw/Lake Nineteen); the remainder camped in tents or were families who used both tents and pop-up campers.

DID YOU BRING A BOAT/CANOE?

Most brought canoes. The few who had boats pointed out that they had small (or electric) motors and did not like large, noisy motors or water skiers (who occasionally use Triangle Lake).

WHAT KIND OF RECREATION ACTIVITIES DO YOU LIKE TO DO WHILE CAMPING?

Fishing and canoeing were the most popular of activities, but being outdoors in the "beautiful quiet" was the most often mentioned feeling. Swimming, berry picking, hunting, walking in the woods, mushroom hunting, sightseeing and photography were also mentioned. "Taking it easy" was common.

WHAT THINGS DIDN'T YOU LIKE ABOUT YOUR TRIP?

Four campers did not like noisy neighbors. One had two complaints about the "Forest Ranger." One complained of a littered site. Two did not like the sound of chainsaws or traffic. Two objected to the fisheries management at Swan Lake. Those who didn't like the bugs or bad weather laughed and said they had had fun anyway.

WHAT DID YOU LIKE?

Answers ranged from "everything" to the peace, quiet, beauty and fish.

WOULD YOU CHANGE ANYTHING?

Most said "No, please leave it the way it is." Others asked for no bugs and less noisy neighbors. Four campers would like access to more lakes that are now closed. Three people asked for toilets (with roofs) at the campsites.

An open house was held at the Manistique Ranger District November 19, 1986, to discuss preliminary management proposals for the Iron Jaw Area and to surface possible new public issues. Comments received were:

-People want access into area - new roads are good.
-Want to have a variety of trails/foot/horse/3&4 wheel.
-Dispersed camping is good.
-No problem with timber harvest activities.
-Want better access to lakes for fishing and for older less able persons. Handicapped people should not be penalized for inability to hike or haul boats long distances.
-Liked "Primitive cabin" rental concept.
-Want existing hiking trail maintained for hiking and skiing.
-Day-use problems at Triangle Lake, no place to turn around, sandy road conditions.
-Would like to see all lakes in Iron Jaw have motorized access.
-A bicycle trail might be good in some of the area.
-Support for continued "back country concept."
-Support for wetland development and a variety of wildlife management practices.
-Support for unimproved access to lakes.
-Desire for more public services/information.
-Protection of Threatened and Endangered plant species needed.

Comments received at the open house were from local people. The phone survey presented on the previous page was partially intended to gain information from non-resident forest users.

Jack McHugh, local recreation entrepreneur and founder of GOD's Country Tours, provided a silent sports enthusiast's perspective to the analysis process. For 4 days during the initial analysis Jack provided comments to the team.

Comment summaries and responses from the Hiawatha Land and Resource Management Plan, Appendix Volume which address the semiprimitive issue are as follows:

1.01 COMMENT SUMMARY STATEMENT: SPNM and SPM Acreage

RESPONDENTS:
1,6,11,27,29,39,41,42,43,53,55,58,60,61,62,70,78,81,
83,91,92,94,99,101,103,104,106,107,109,112,114,116,
117,120,124,125,126,127,128,131,132,133,137,141,
143,146,148,150,152,155,156,159,161,162,166,170,172,
177,181,183,184,186,195,203,206,210,212,220,221,222,
232,241,245,247,249,250,254,257,271,272,279,285,286,
297,321,323,325,327,331,342,354,358,363,367,370,375,
376,379,380,390,393,395,397,410,425,434

The greatest share of comments showed that there was an inadequate allocation and/or emphasis placed on semiprimitive nonmotorized management. The needs most often expressed were beauty, solitude, tranquility, habitat protection, ecological protection and diversity, research, and preservation for future generations. Excessive roading was a common objection because of its disrupting effects upon nesting and feeding patterns of wildlife and the damage to fish and water resources resulting from erosion. Some respondents were opposed to closed areas and/or restricted motorized use because they felt that these uses infringe upon the rights of young, old, handicapped, and local users.

FOREST SERVICE RESPONSE:

Semiprimitive nonmotorized (SPNM) acreage in the Forest Plan has been increased to satisfy projected recreation demands for the 1st Decade. The initial allocation of 6.1 and 6.3 management areas for SPNM has been increased from 15,600 acres to 21,863 acres. Also, some of the 8.1 Management Areas will be managed for SPNM outputs. In addition a new management area (MA) labeled 8.3 has been developed that emphasizes limited development and remote habitats for wildlife. This new MA has 64,200 acres of which the majority of these acres will be managed with a semiprimitive nonmotorized emphasis. Another area that semiprimitive recreation demands will be met is in the 9.2 Management Areas. These are the wilderness study areas identified in the Forest Plan and include 26,830 acres. The total of the 5 management areas where semiprimitive nonmotorized management will occur is 113,300 acres or 13 percent of the total Forest land base. The remaining Forest land base will be managed for other recreation outputs.

1.02 COMMENT SUMMARY STATEMENT: Uninduced SPNM RVDs

RESPONDENTS:
152,354,358,363,367,370,375,376,379,380,390

The uninduced semiprimitive nonmotorized concept has no validity in meeting overall recreation SPNM demand.

FOREST SERVICE RESPONSE:

The theory of counting uninduced RVDs in management areas other than semiprimitive nonmotorized areas has been re-examined. Specific resource attributes and other criteria have to exist before semiprimitive nonmotorized outputs can be counted. These conditions exist in the new 8.3 Management Areas as well as 6.1, 6.3, 8.1, and 9.2. No uninduced SPNM RVDs are counted toward meeting SPNM demand. Although there would be some semiprimitive nonmotorized outputs from other management areas, the outputs would be unpredictable and limited. The semiprimitive nonmotorized acreage (6.1, 6.3, 8.1, 8.3, and 9.2) on the Forest was increased to help meet demand in the First Decade.

1.01-F COMMENT SUMMARY STATEMENT: SPNM and SPM Acreage

RESPONDENTS:
5,10

Respondents were opposed to unnecessary allocation of land for single-use purposes such as wilderness. They supported semiprimitive set-asides as long as sound judgment had been used.

FOREST SERVICE RESPONSE:

Wilderness is not considered to be a single-use activity. Hunting, fishing, trapping, canoeing, hiking, nature study, etc. are all permitted within wilderness areas. Areas managed for semiprimitive values will support a broad range of uses including camping, hiking, hunting, fishing, trapping, canoeing, nature study, wildlife habitat, timber harvest, and limited amounts of motorized travel in the case of semiprimitive motorized areas. Demand for areas offering these opportunities in a semiprimitive environment were derived or developed from four sources: existing use; surveys; Resource Planning Act data; and an extensive literature review. Designation of the semiprimitive areas identified in the Forest Plan will not reduce the overall Forest ability to meet demands on other areas of the Forest. See Comment Summaries 1.01-D and 7.08.

1.04-B COMMENT SUMMARY STATEMENT: Even-aged Management of Northern Hardwoods in Semiprimitive Areas

RESPONDENTS:
380
The respondent expressed concern that allowing even-age management of northern hardwoods in semiprimitive areas is contrary to the stated desired future condition, goals and objectives.

FOREST SERVICE RESPONSE:

The standards and guidelines in the Proposed Forest Plan did not specify the amount of northern hardwood to be managed under even- or uneven-age management. The standards and guidelines have been changed to state the following direction for the type of management of northern hardwood.

a. In 6.1 and 6.2 Management Areas, standards and guidelines strive for 90 percent of uneven-age management of northern hardwood and 10 percent even-age management. This will allow some even-age management for wildlife purposes. Vegetative composition objectives for northern hardwood is a minimum of 10 percent of the semiprimitive management areas.

b. In 6.4 Management Areas, standards and guidelines strive for at least 80 percent uneven-age management of northern hardwood and 20 percent even-age management. Since the 6.4 Management Areas are wildlife emphasis in a semiprimitive motorized setting, more even-age management of the hardwood type is desirable for wildlife.

1.03 COMMENT SUMMARY STATEMENT: Roads/Trails Policy in Semiprimitive Areas (amount open/closed)

RESPONDENTS:
1,11,44,77,78,103,105,122,126,156,159,160,161,171, 200,220,235,240,241,249,250,252,284,314,315,322,338, 348,376,379

Respondents stated that low road density and standards equate to high semiprimitive recreation experience for hikers and some hunters and fishermen. Some respondents stated that a low number of primitive roads make semiprimitive management much easier and help to ensure the protection of delicate wildlife and ecological areas from vehicle activities. Other respondents were against closed areas and for restricting motorized use because it infringed on the rights of senior citizens, handicapped, and local people. They wanted existing roads to be kept open for protection purposes (fire, disease and pest outbreaks) and driving for pleasure (driving to enjoy nature, wildlife, serenity, etc.). Others stated that closing roads is a wasteful practice because, in actuality, it is unnecessary and unenforceable.

FOREST SERVICE RESPONSE:

About 87 percent of the Forest is open to motorized type activities. In addition, the semiprimitive areas are designed to meet the public's needs for both motorized and nonmotorized activities. Management Areas 6.1, 6.3, 8.1, portions of 8.3, and 9.2 are the semiprimitive nonmotorized areas. Management Areas 6.2 and 6.4 are the areas where only designated roads are open to the public for hunting, fishing, and driving for pleasure. No roads are open in 6.3 areas. Management Area 8.1 allows a road density of 1.0 miles per square mile. Management Area 8.3 allows 2.0 miles per square mile. All roads within semiprimitive areas must lay lightly on the land (be of low standards) and no new, high standard type, roads will be built. Road density of long-term roads within 6.1 areas will not exceed 1-2 miles/square mile and 1½-2½ miles/square mile in 6.2 and 6.4 management areas.

All semiprimitive nonmotorized areas are closed to motorized vehicles except those authorized by permit or contract and those needed for limited access under special situations. In semiprimitive motorized areas (6.2, 6.4 and portions of 8.3 Management Areas), certain roads will be posted open to motorized use.

1.04-A COMMENT SUMMARY STATEMENT: Timber Harvest Levels in Semi-primitive Areas.

RESPONDENTS:
152,241,270,282,284,300,343,363,380,397,425,434

Comments ranged from allowing no cutting of timber in semiprimitive areas to increasing harvest in these areas. Some comments expressed views to change from semiprimitive management areas to a less restrictive area so timber harvesting would be more practical according to the standards and guidelines. Some responses expressed concern about the high level of timber sale activity in the semiprimitive areas and 2.2 Management Areas. The concern centers on the primary emphasis in these areas. Several comments point out that timber management appears to be setting the direction rather than recreation and wildlife considerations as stated in the objectives for these areas in the Forest Plan. Some respondents pointed out that timber harvest volume in the 6.2 Management Areas ranked 6th out of all of the management areas yet these areas are to contribute toward providing semiprimitive demand. One response pointed out that the timber harvest levels appeared to be contradictory to the stated objectives for semiprimitive areas and a need exists to document the rationale for these high harvest levels in the Environmental Impact Statement. No analysis can be found supporting these semiprimitive timber harvest levels and intensity.

FOREST SERVICE RESPONSE:

Refer to the major management practice listed for each semiprimitive management area in the Forest Plan. These charts describe what is planned for each semiprimitive management area for the next 10 years. Harvest levels in semiprimitive areas (6.1, 6.2, 6.4, and 8.3) in Decade 1 in the Proposed Forest Plan was 55.1 MMBF. This has been reduced to 22.9 MMBF for the following reasons:

1. Comment analysis revealed most responses demonstrated opposition to the size of the proposed increase in harvest over current levels. The reduction will be compatible with this analysis to reduce overall timber harvest levels, which can come from semiprimitive areas.
2. The reduction will be more compatible with the desired future conditions, goals and objectives for recreation and wildlife. These desired conditions, goals, and objectives are the driving force which determines the management for semiprimitive areas. These conditions are described for each management area in the Forest Plan.
3. The reduction will help the issue of achieving more cost-efficient timber species. Removing some of the sales from areas with restrictions to timber harvest and moving sales to management areas with less restrictions will make the sales more cost-efficient. Examples of these less-restrictive management areas are 1.2, 2.2 and 4.5.

An analysis of the semiprimitive comments revealed a need to increase semiprimitive nonmotorized (SPNM) (6.1, 6.3, & 8.3) acres to meet demand for semiprimitive nonmotorized. Due to the more-restrictive standards and guidelines for timber management in semiprimitive nonmotorized areas, total timber harvest levels and intensity will tend to be lower than for sales in a semiprimitive motorized area.

Timber sale volumes and types of harvest were changed for the semiprimitive areas during the next 10 years. Refer to Timber Harvest Summaries in Chapter IV of the Forest Plan.

The standards and guidelines for semiprimitive management are more restrictive to timber harvesting than in other areas where harvesting is also allowed.

These restrictions help provide the desired future condition, goals, and objectives for the area. To reduce these standards would cause the areas to be classified as other than semiprimitive.

APPENDIX C

Consultations

The following Hiawatha National Forest employees provided information or consultation in the analysis and/or conclusions of this project.

Constance Athman, Hydrologist, Supervisor's Office
Bryan Barnett, Assistant Ranger, Timber, Manistique
Charles Bassett, Fisheries Biologist, Supervisor's Office
James Bruce, District Ranger, Munising Ranger District
Larry Burkhart, Assistant Ranger, Recreation, Sault Ste. Marie
Arthur Easterbrook, Recreation, Cultural Resources, Water, Soils Staff Officer, Supervisor's Office
Ronald Hannan, Operations Research Analyst, Supervisor's Office
Dewayne Ide, Engineering and Land Management Planning Staff Officer
James Klus, Assistant Ranger, Recreation, Manistique
Deborah LeBlanc, Forestry Technician, Manistique Ranger District
G.H. Lyon, Jr., District Ranger, Manistique Ranger District
Claudia Mielke, Landscape Architect, Supervisor's Office
Robert Panek, Forester, Manistique Ranger District
Nancy Rydquist, Transportation Planner, Supervisor's Office
LaVerne Schultz, Assistant Ranger, Recreation, Munising
Loren Woerpel, Lands, Aviation, Fire, Fisheries, Information Telecommunications Staff Officer, Supervisor's Office

APPENDIX D
RELATIONSHIP TO THE FOREST PLAN

The Hiawatha Land and Resource Management Plan designated the Iron Jaw Area as a semiprimitive motorized area. Analysis of the Iron Jaw Area focused on achieving a desired future condition by means of the following management objectives. Two management areas fall within the Iron Jaw Area. Purpose statements of the management areas are:

Management Area 6.2 - Semiprimitive Motorized

Purpose:

To provide semiprimitive motorized areas with dispersed recreation sites.

To develop facilities for access to fishing and canoeing lakes and streams.

To develop trailhead facilities for hiking and ski trails.

To create specific desired wildlife habitat through vegetative manipulation.

To produce a mixture of forest products while encouraging long-lived trees in a natural setting.

Management Area 8.4 - Potential Wild and Scenic Rivers Purpose:

General Purpose For All River Reaches:

To manage in a manner which is compatible with possible future designation of the rivers as part of National Wild and Scenic River System.

Potential Recreation Reaches:

To restore instream and riparian habitat.

To improve water quality and preserve the rivers in a free-flowing condition.

To provide opportunities for recreation activities such as hiking, canoeing, cross country skiing, bicycling, hunting, fishing, trapping and viewing scenery.

To feature long lived tree species.

To provide habitat for a variety of riparian associated wildlife species.

APPENDIX E - FOREST SERVICE INTERNAL DOCUMENTS

1986 Hiawatha National Forest Land and Resource Management Plan, Final Environmental Impact Statement and Appendix volumes.
The Land and Resource Management Plan was developed to set management direction for the Hiawatha National Forest in the next 10 to 15 years. The purpose of the Forest Plan is to provide for multiple use and sustained yield of forest products and services, particularly coordination of outdoor recreation, range, timber, wildlife fish and wilderness. NOTE: The Iron Jaw Area was designated as a semiprimitive motorized area by the Land Management Plan.

"1986 Working Together for Multiple Use: Integrated Resource Management" United States Department of Agriculture - Forest Service - Eastern Region. The Integrated Resource Management booklet outlines the concept and approach of integrating collective knowledge, skills and talents in a team effort to implement Forest Plans. The principles of Integrated Resource Management are designed to help achieve Plan goals and objectives through a balance in multiple uses. The team approach is a key concept in Integrated Resource Management.

1986 ROS Book. U.S. Department of Agriculture, Forest Service. and ROS Users Guide - Eastern Region Supplement. The Recreation Opportunity Spectrum system and the Users Guide were developed to delineate, define, and integrate outdoor recreation opportunities in land and resource management planning, and to provide for recreation integration/coordination necessary for integrated management prescriptions and associated standards to deal with the recreation resource.

1977-1981 Hiawatha National Forest Recreation Management Plan.
Purposes of this plan were to implement the Forest's Multiple Use Plan, to establish goals for the recreation resource, to identify recreation management problems and offer solutions, to identify the type and amount of land needed to meet recreation needs, and to analyze the impact of the recreation management program on the environment and land management of the Hiawatha. NOTE: This plan upheld the 1973 Multiple Use Plan designation of the Iron Jaw Area as a "Quiet Area."

1976 Hiawatha National Forest Off-Road Vehicle Use Policy. Roads within the Iron Jaw Area were closed to off-road vehicle use for protection of eagle, osprey and loon habitat.

1973 Hiawatha National Forest Multiple Use Management Plan. The recreation objective of this plan was to emphasize the diversity of recreation opportunities which provide solitude, a sense of accomplishment, enjoyment, spiritual renewal and a mood of naturalness. NOTE: The Iron Jaw Area was designated as a "Quiet Area" to provide an area which would present opportunities for a high degree of solitude for recreationists.

1969 Hiawatha National Forest Recreation Management Plan. The recreation program in this plan was directed toward increasing and enhancing recreation opportunities within resource capabilities and in coordination with other resource use. This plan was intended to provide direction for many years into the future. Recreation resources were allocated through the year 2000.

1965 Hiawatha National Forest Recreation Management Plan. This plan was a direct result of a 1960 National Forest Recreation Survey. The results of the survey were directly incorporated into the Hiawatha's 1965 plan. At that time there was no Forest Multiple Use Management Plan. This plan was the first to bring out, and require, coordination between recreation and other resources.

APPENDIX F

KEY POLICIES - ALTERNATIVE A

TYPE OF SURFACING: Multi-resource use. May adjust gravel.

DESIGN OF ACCESS, FOR WHO AND FOR WHAT VEHICLES: 3 lakes motorized boat access. Vehicle camping 100' back. Selected river sites the same type of access/camping. Cross-country trails may be groomed.

WILDERNESS/PIT/VAULT TOILETS: Toilets at car camping sites.

EVIDENCE OF "MANAGEMENT/ADMINISTRATION:" Low timber harvests, low road density, trail maintenance (lower end of trail maintenance), routing wildlife surveys, intensive surveys for loon, pine marten, lake sturgeon, sandhill, sharptail.

CAMPING PERMITS REQUIRED: At designated sites, bush whacking o.k.

TROUT FISHERIES: Loon objectives primary, fish management secondary on Rim Lake. Lake 19 managed for trout. Triangle and Swan managed for warmwater fish.

SIGNING: Use natural barriers.

ENTRY CYCLE: Every 20 years. Red pine and sharptail habitat are the only sales now.

FIRE: Fire rings provided at designated sites.

PINE MARTEN HABITAT: Entire area exclusive of W 1/4 (leave out for sharptail)

LOON HABITAT: Loon objectives primary on Rim Lake.

EAGLE NESTING HABITAT: Develop old growth and both marten corridors and plant bullheads.

OLD GROWTH %: Designate 13% for old growth.

EXTERIOR ROAD SYSTEM (440): Don't reconstruct 440.

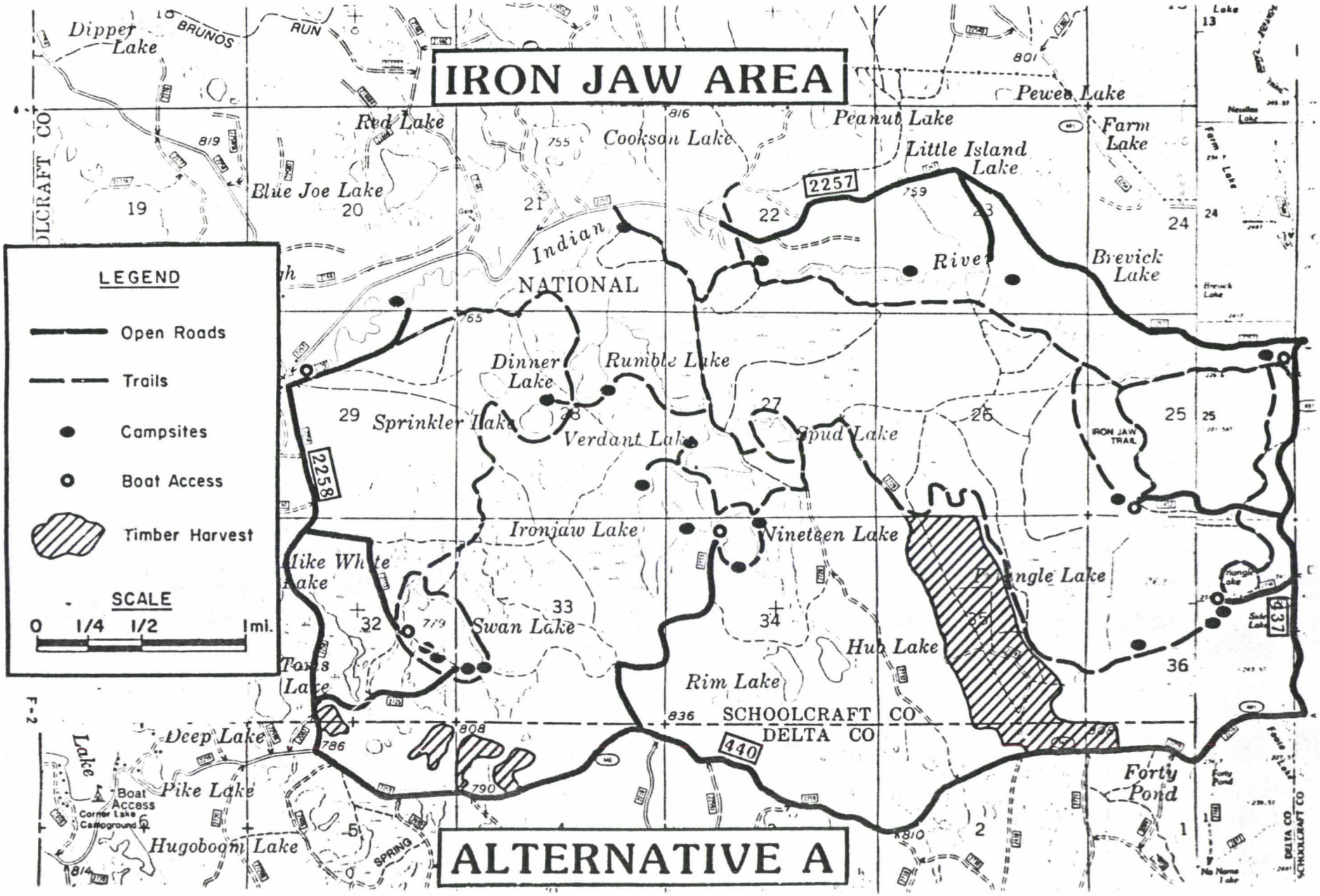
OWNERSHIP - COMPARTMENT 30: Exchange away land west of FR 2258.

BOAT AND ANGLER USE: Provide angler/boat access, harden/relocate.

OVERUSE OF SITES AND SEMIPRIMITIVE EXPECTATIONS: Separate camping sites from day use and boat access. Require permits at all sites. No motorized campsites within 100' of water, provide canoe-in/hike-in campsites, net increase in number of campsites, follow first decade Plan access changes.

ATV USE: Designate roads and trails for snow use. No ATV routes in snow-free season.

VEHICLE TRAFFIC AND ROAD 2257: Obliterate W 1/2 FR 2257, allow one spur road north of river; provide parking at 2258 and 2257.


IRON JAW AREA
LEGEND
Open Roads
Trails
Campsites
Boat Access
Timber Harvest
SCALE
0 1/4 1/2 1mi.
Dipper Lake
BRUNOS RUN
Red Lake
Blue Joe Lake
Cookson Lake
Peanut Lake
Pewee Lake
Farm Lake
Little Island Lake
Brevick Lake
Indian
NATIONAL
River
Dinner Lake
Rumble Lake
Sprinkler Lake
Verdant Lake
Spud Lake
IRON JAW TRAIL
Ironjaw Lake
Nineteen Lake
Triangle Lake
Swan Lake
Hub Lake
Rim Lake
Deep Lake
Pike Lake
Boat Access
Corner Lake Campground
Hugoboom Lake
Forty Pond
SCHOOLCRAFT CO
DELTA CO
2257
2258
440
ALTERNATIVE A

KEY POLICIES - ALTERNATIVE B

TYPE OF SURFACING: Natural, very light gravel on collector and local roads.

DESIGN OF ACCESS, FOR WHO AND FOR WHAT VEHICLES: Vehicle camping 200' on Swan, 500' on Iron Jaw. No boat access (carry-in) on Iron Jaw. Triangle 200', close 2452. Close 2103; increase different parking capacity 2725 and 2734; allow temporary roads for timber harvest. No ATV, no grooming of cross-country ski trails.

WILDERNESS/PIT/VAULT TOILETS: Toilets without roofs or walls.

EVIDENCE OF "MANAGEMENT/ADMINISTRATION:" Low road and timber harvest, low level trail maintenance, minimum intensity for wildlife survey.

CAMPING PERMITS REQUIRED: No permit policy (unless overused).

TROUT FISHERIES: Fishery determined by loon emphasis. Rim Lake: Close during loon nesting season, and warmwater fishery. No chemical treatment after initial effort, if any.

SIGNING: Markers along river to identify campsites. Natural barriers, trail interpretation and river put-in points.

ENTRY CYCLE: Delay until recreation facilities are in place. Selection cutting, light logging equipment, "deficit sales" o.k.

FIRE: Fire rings provided at designated campsites.

PINE MARTEN HABITAT: Entire area exclusive of W 1/4 (leave out for sharptail).

LOON HABITAT: Rim Lake warmwater fish, close in nesting season.

EAGLE NESTING HABITAT: Develop old growth and both marten corridors and plant bullheads.

OLD GROWTH: Designate 13% for old growth.

EXTERIOR ROAD SYSTEM (440): Don't reconstruct 440.

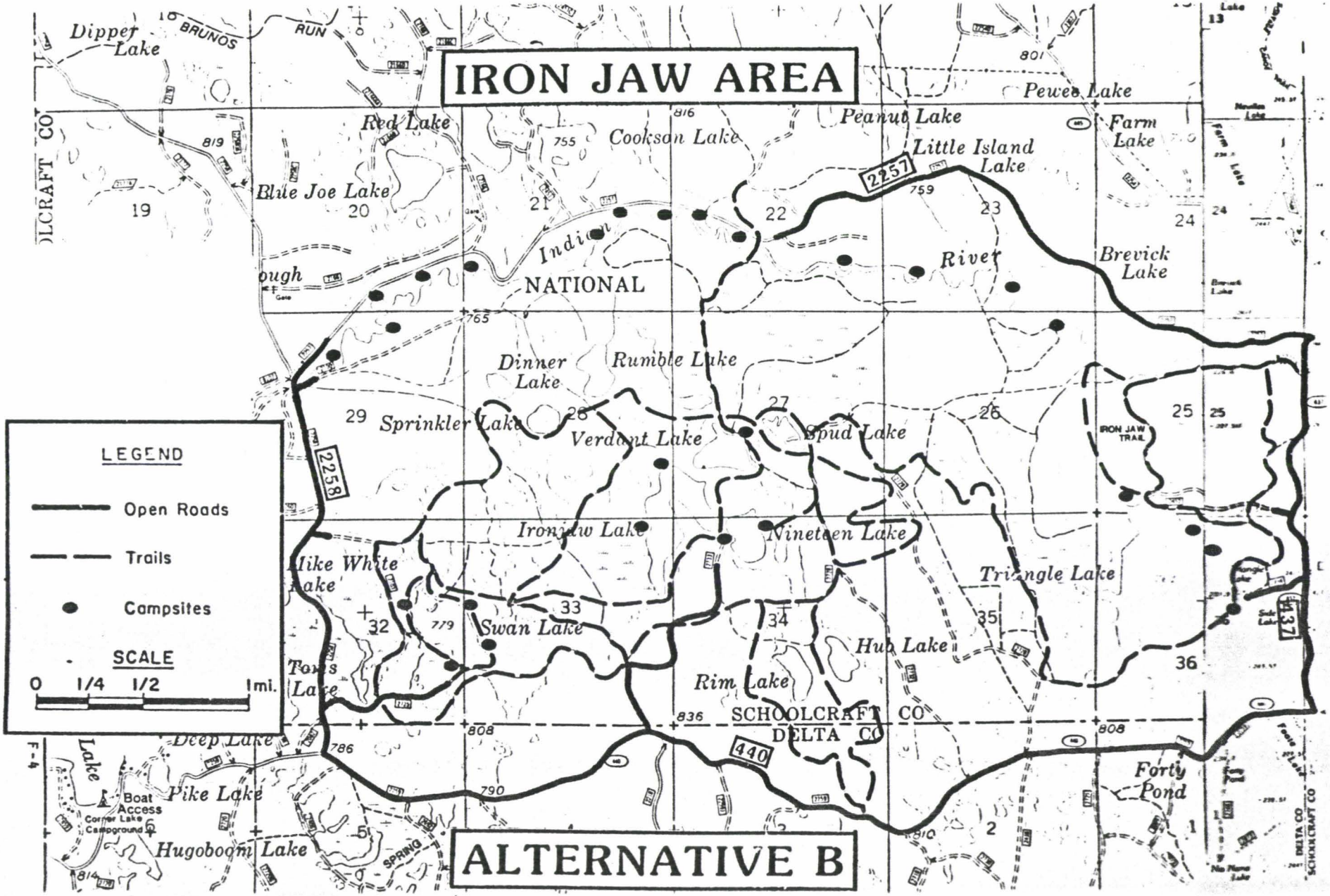
OWNERSHIP - COMPARTMENT 30: Acquire around Mike White and Toms, 80 acres in SE, spend money to administer C-30 lands.

BOAT AND ANGLER USE: No vehicle access to water. Relocate site.

OVERUSE OF SITES - SEMIPRIMITIVE EXPECTATIONS: Disperse more sites along roadways; limit number of road ends. Eliminate motorized access to waterfront sites, provide canoe-in/hike-in campsites, net increase in number of campsites.

ATV USE: No snow or snow-free AVT/ORV use.

VEHICLE TRAFFIC AND ROAD 2257: Obliterate W 1/2 FR 2257, provide parking areas at 2258 and County Road 437.


IRON JAW AREA
ALTERNATIVE B
LEGEND
Open Roads
Trails
Campsites
SCALE
0 1/4 1/2 1mi.
Dipper Lake
BRUNOS RUN
Red Lake
Blue Joe Lake
Cookson Lake
Peanut Lake
Pewee Lake
Farm Lake
Little Island Lake
Indian River
NATIONAL
Brevick Lake
Dinner Lake
Rumble Lake
Sprinkler Lake
Verdant Lake
Spud Lake
IRON JAW TRAIL
Ironjaw Lake
Nineteen Lake
Mike White Lake
Swan Lake
Triangle Lake
Hub Lake
Toms Lake
Rim Lake
SCHOOLCRAFT CO
DELTA CO
Deep Lake
Pike Lake
Boat Access
Corner Lake Campground
Hugoboom Lake
SPRING
Forty Pond
2257
2258
440
437

KEY POLICIES - ALTERNATIVE C

TYPE OF SURFACING: Current standards acceptable.

DESIGN OF ACCESS, FOR WHO AND FOR WHAT VEHICLES: Move campsites back 100' on all areas. ATV use on all roads.

WILDERNESS/PIT/VAULT TOILETS: Toilets with roofs at all walk-in sites.

EVIDENCE OF "MANAGEMENT/ADMINISTRATION:" Follow 1986-1996 sale plan for area. Expect harvest of 8 MMBF in first decade. Manage for pine marten, improve on both east and west sides.

CAMPING PERMITS REQUIRED: Reduce length of stay, permits at designated areas, no fires with bush whack camping.

TROUT FISHERIES: Fisheries management as in Forest Plan.

SIGNING: Gates or barriers allowed.

ENTRY CYCLE: 20-year entry cycle on a stand basis.

FIRE: Rings at designated sites.

ROAD MAINTENANCE: Current road design standards appropriate.

PINE MARTEN HABITAT: Develop east and west corridors.

LOON HABITAT: Manage fisheries for trout as per Forest Plan.

EAGLE NESTING HABITAT: Develop old growth around Triangle, Iron Jaw, Nineteen, Dinner, Sprinkler, Rumble; develop marten corridors; plant bullheads.

OLD GROWTH: Develop old growth around Triangle, Iron Jaw, Nineteen, Sprinkler, and Rumble.

EXTERIOR ROAD SYSTEM (440): Reconstruct as proposed.

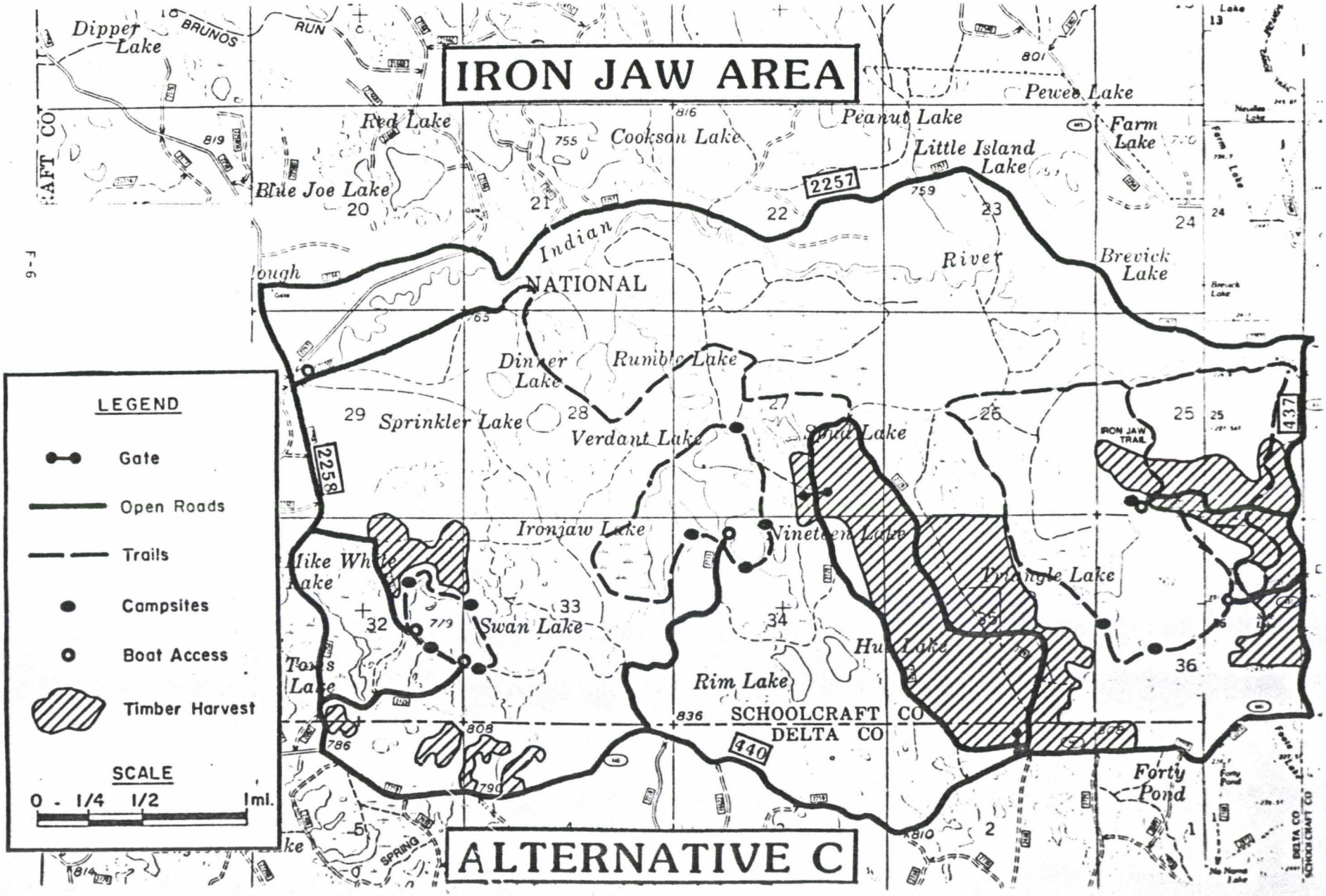
OWNERSHIP - COMPARTMENT 30: Acquire 80 in southeast of Iron Jaw.

BOAT AND ANGLER USE: Harden/stabilize sites.

OVERUSE OF SITES - SEMIPRIMITIVE EXPECTATIONS: For current sites, move sites back from water; reduce number of sites accessible from one road terminus; net increase in sites; separate campsites from boat and day use; reduce length of stay at campsites to 1 week, provide canoe-in/hike-in campsites.

ATV USE: Develop ATV trail through area (FR 2100-FR 2728); for year-a-round; use allow ATVs in snow-free season.

VEHICLE TRAFFIC AND ROAD 2257: Relocate W end FR 2257 to FR 2166.


IRON JAW AREA
ALTERNATIVE C
LEGEND
Gate
Open Roads
Trails
Campsites
Boat Access
Timber Harvest
SCALE
0 - 1/4 1/2 1ml.
Dipper Lake
BRUNOS RUN
Red Lake
Blue Joe Lake
Cookson Lake
Peanut Lake
Pewee Lake
Farm Lake
Little Island Lake
Indian River NATIONAL
Brevick Lake
Dinner Lake
Rumble Lake
Sprinkler Lake
Verdant Lake
Ironjaw Lake
Vinetta Lake
Triangle Lake
Mike White Lake
Swan Lake
Rim Lake
Forty Pond
IRON JAW TRAIL
2257
2258
437
440
SCHOOLCRAFT CO
DELTA CO

KEY POLICIES - ALTERNATIVE D

TYPE OF SURFACING: Dirt, ungraveled, primitive roads (that take a long time to drive on).

DESIGN OF ACCESS, FOR WHO AND FOR WHAT VEHICLES: Reduce motorized access to water sites. Canoe access increased on river. Provide a net increase in number of campsites. Campsites and boat landings 100' back from water. Designate trails and roads for winter ATV use only.Cross-country skiing permitted.

WILDERNESS/PIT/VAULT TOILETS: Wilderness toilets with a roof.

EVIDENCE OF "MANAGEMENT/ADMINISTRATION:" Infrequent FS visits, timber harvests to meet pine marten, sharptail, and VQOs.

CAMPING PERMITS REQUIRED: Yes.

TROUT FISHERIES: Relocate some angler access sites. Continue with coldwater fishery at Lake 19. Remainder warmwater, except Swan for trout and warmwater.

SIGNING: Close roads with rocks and trees, natural barriers.

ENTRY CYCLE: One shot cycle.

FIRE: Fire rings acceptable.

ROAD MAINTENANCE: Low.

PINE MARTEN HABITAT: Develop E and W corridors.

LOON HABITAT: Relocate angler site at Rim, warmwater fishery.

EAGLE NESTING HABITAT: Develop old growth, both marten corridors and plant bullheads.

OLD GROWTH: Designate 13% for old growth.

EXTERIOR ROAD SYSTEM (440): Don't reconstruct 440.

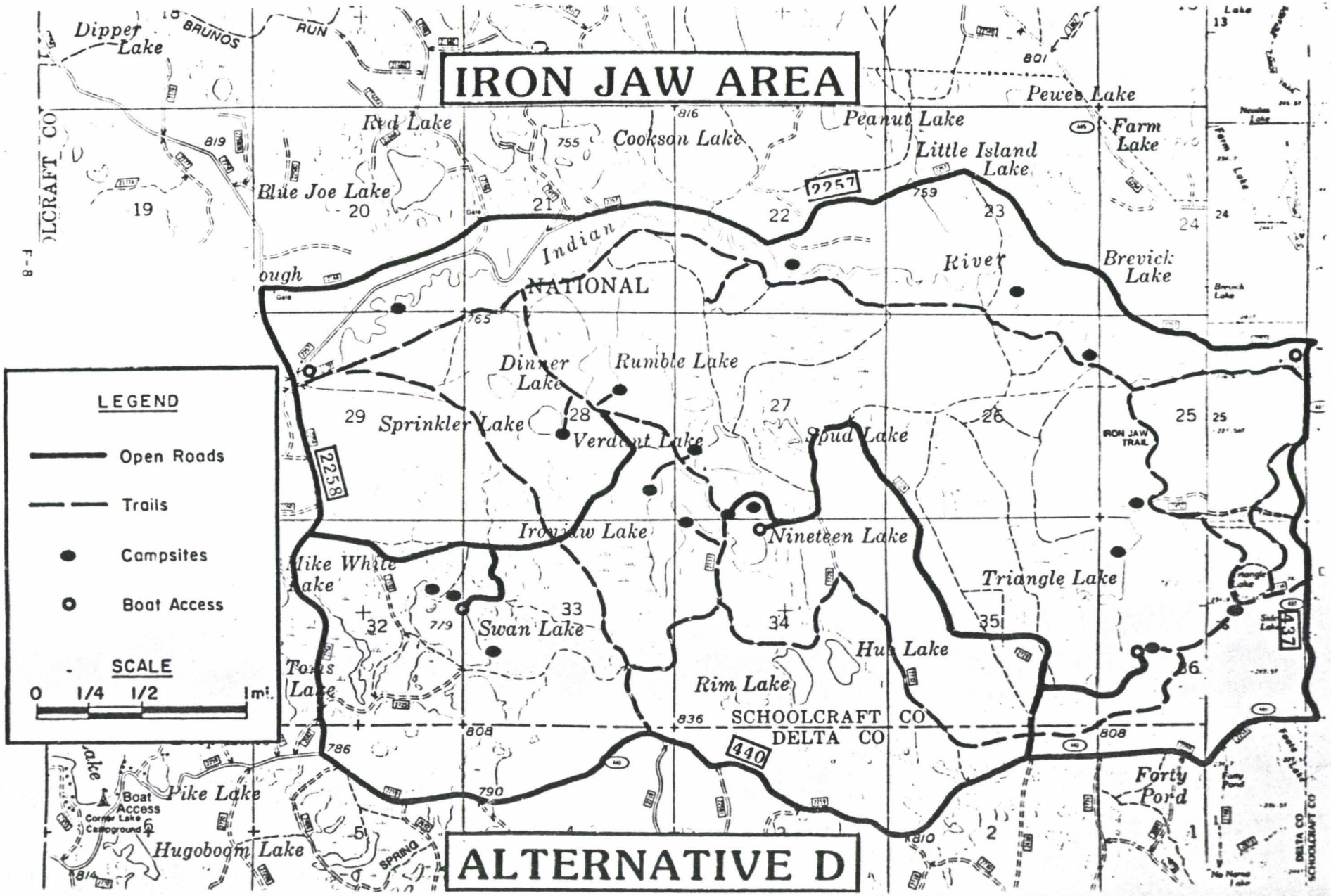
OWNERSHIP - COMPARTMENT 30: Exchange away USFS land west of FR 2258; acquire 80 in SE; acquire private section of FR 2257.

BOAT AND ANGLER USE: Provide angler/boat access. Harden/relocate if needed.

OVERUSE OF SITES - SEMIPRIMITIVE EXPECTATIONS: Separate camping sites from day use and boat access; reduce access to waterfront campsites - 100' back, net increase in campsites. Boat access at Triangle, Nineteen, and Swan; no access to river except at 437 and 2258.

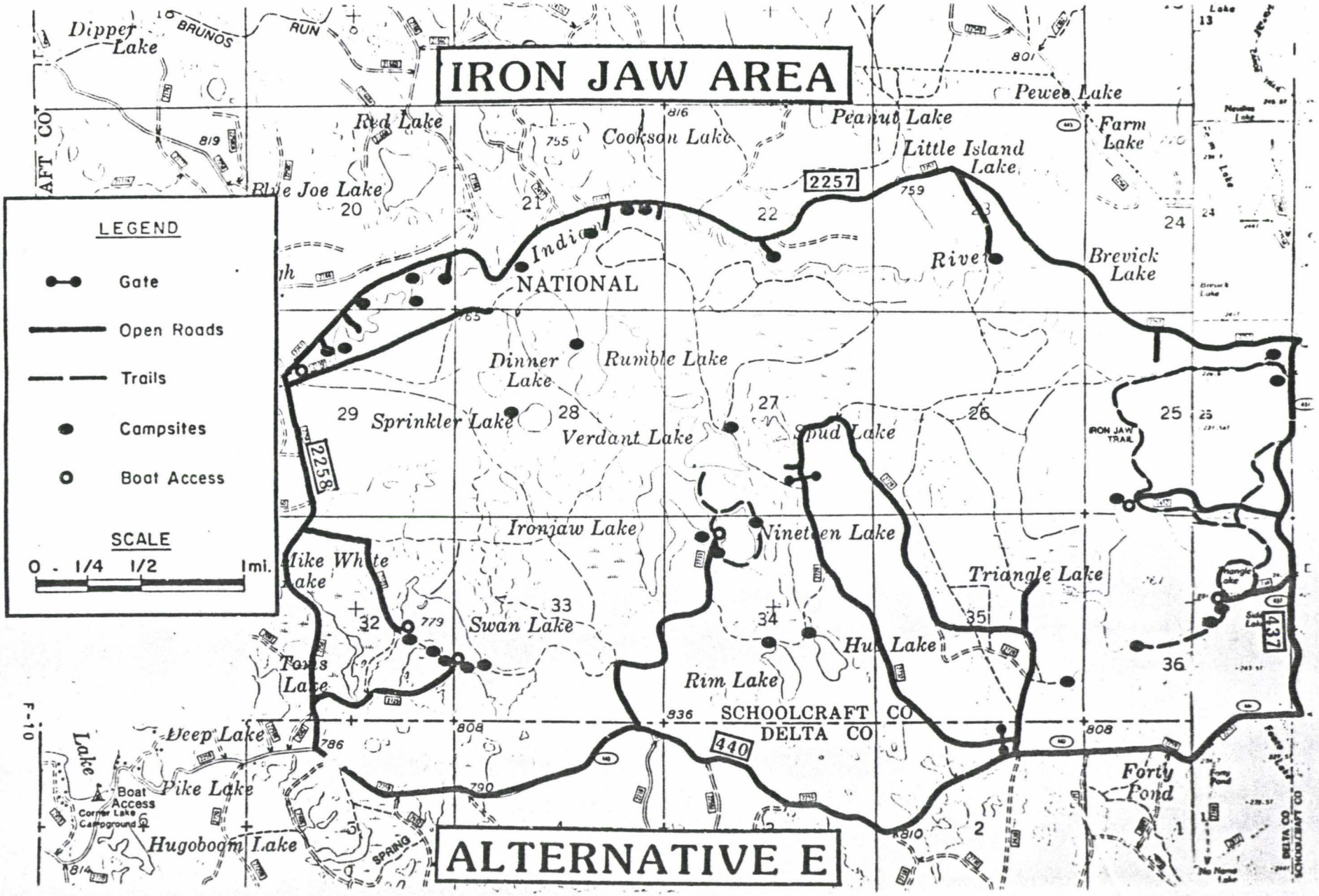
ATV USE: No ATV's in snow-free season.

VEHICLE TRAFFIC AND ROAD 2257: Relocate W end FR 2257 to FR 2166, allow no spur roads to river.


IRON JAW AREA
ALTERNATIVE D
LEGEND
Open Roads
Trails
Campsites
Boat Access
SCALE
0 1/4 1/2 Imi.
Dipper Lake
BRUNOS RUN
Red Lake
Blue Joe Lake
Cookson Lake
Peanut Lake
Pewee Lake
Farm Lake
Little Island Lake
Indian River
NATIONAL
Brevick Lake
Dinner Lake
Rumble Lake
Sprinkler Lake
Verdant Lake
Spud Lake
IRON JAW TRAIL
Iron Jaw Lake
Nineteen Lake
Mike White Lake
Triangle Lake
Swan Lake
Hub Lake
Toms Lake
Rim Lake
SCHOOLCRAFT CO
DELTA CO
Pike Lake
Boat Access
Corner Lake Campground
Hugoboom Lake
Forty Pond
2257
2258
440
437
SPRING

KEY POLICIES - ALTERNATIVE E

No action: Allow the area to take its own course with no management activities whatsoever implemented.


IRON JAW AREA
ALTERNATIVE E
LEGEND
Gate
Open Roads
Trails
Campsites
Boat Access
SCALE
0 - 1/4 1/2 1mi.
Dipper Lake
BRUNOS RUN
Red Lake
Blue Joe Lake
Cookson Lake
Peanut Lake
Pewee Lake
Farm Lake
Little Island Lake
Brevick Lake
NATIONAL
Dinner Lake
Rumble Lake
Sprinkler Lake
Verdant Lake
Spud Lake
Ironjaw Lake
Nineteen Lake
Triangle Lake
Swan Lake
Rim Lake
Deep Lake
Pike Lake
Hugoboom Lake
Forty Pond
Boat Access
Corner Lake Campground
SCHOOLCRAFT CO
DELTA CO
2257
2258
440
437
IRON JAW TRAIL
SPRING
F-10

KEY POLICIES - ALTERNATIVE F

TYPE OF SURFACING: Dirt - 2 rut.

DESIGN OF ACCESS, FOR WHO AND FOR WHAT VEHICLES: No vehicle access to water; no vehicles in campsites; cross-country ski trails - packed, not tracked - possibly accomplished with volunteers. Snowmobile traverse trails, frequency once a week to once a month.

WILDERNESS/PIT/VAULT TOILETS: Pit - no roof, with walls.

EVIDENCE OF "MANAGEMENT/ADMINISTRATION:" Low evidence, low density.

CAMPING PERMITS REQUIRED: Required at designated campsites.

TROUT FISHERIES: Loon objectives primary, fish management secondary on Rim Lake. Lake 19 managed for trout. Triangle and Swan managed for warmwater fish.

SIGNING: Use natural barriers.

ENTRY CYCLE: Initial entry accomplish vegetative manipulation (deer, grouse, sharptail and pine marten); lowest level manipulation consistent with reaching wildlife objectives and big tree around lakes.

FIRE: Fire rings provided at designated sites.

PINE MARTEN HABITAT: Develop E and W corridors.

LOON HABITAT: Loon objectives primary on Rim Lake.

EAGLE NESTING HABITAT: Develop old growth, both marten corridors, plant bullheads in winterkill lakes.

OLD GROWTH: Develop old growth around lakes.

EXTERIOR ROAD SYSTEM (440): Reconstruct to existi .g speed.

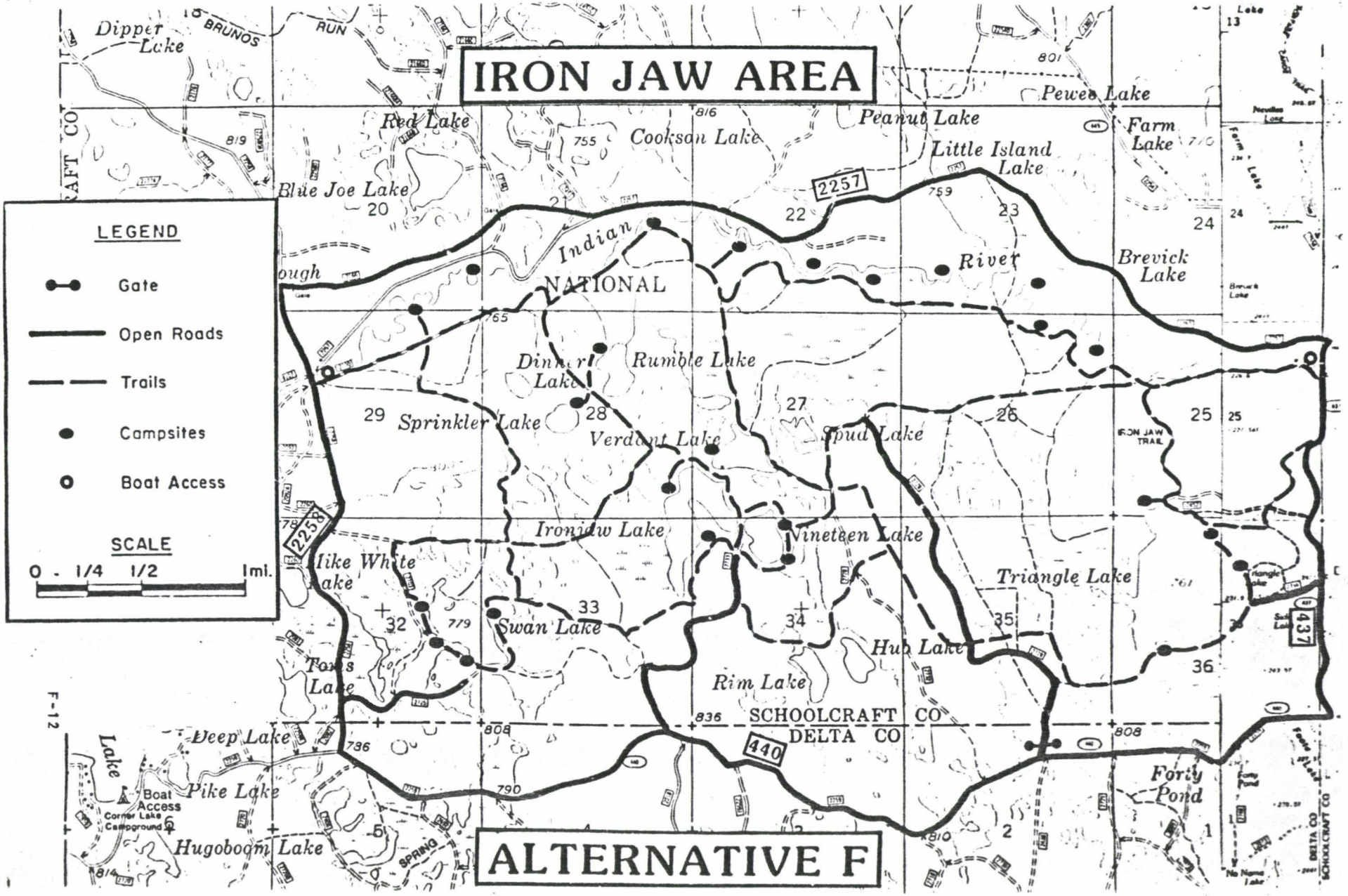
OWNERSHIP - COMPARTMENT 30: Acquire around Mike White and Toms, and the 80 acres in southeast.

BOAT AND ANGLER USE: No vehicle access to water; relocate sites as needed.

OVERUSE OF SITES - SEMIPRIMITIVE EXPECTATIONS: Carry-in boat access only; campsites 100-300' back from water; provide canoe-in/hike-in campsites. Permits required for all designated campsites; provide back packing opportunity and family camping that is not car camping; cross-country ski trails.

ATV USE: Snowmobiles to parking lots only; no summer ATV on roads.

VEHICLE TRAFFIC AND ROAD 2257: Relocate W end FR 2257 to FR 2166; allow no spur roads to river.


IRON JAW AREA
ALTERNATIVE F
LEGEND
Gate
Open Roads
Trails
Campsites
Boat Access
SCALE
0 - 1/4 1/2 1mi.
Dipper Lake
BRUNOS RUN
Red Lake
Cookson Lake
Peanut Lake
Pewee Lake
Farm Lake
Little Island Lake
Blue Joe Lake
2257
Indian
NATIONAL
River
Brevick Lake
Dinner Lake
Rumble Lake
Sprinkler Lake
Verdant Lake
Spud Lake
IRON JAW TRAIL
2258
Ironjaw Lake
Nineteen Lake
Triangle Lake
Mike White Lake
Swan Lake
Hub Lake
Rim Lake
Twin Lake
SCHOOLCRAFT CO
DELTA CO
440
437
Deep Lake
Pike Lake
Boat Access
Corner Lake Campground
Hugoboom Lake
SPRING
Forty Pond
F-12

KEY POLICIES - ALTERNATIVE G

TYPE OF SURFACING: As is.

DESIGN OF ACCESS, FOR WHO AND FOR WHAT VEHICLES: Separate day use and boat access. Boat and vehicle access to Triangle, Swan, Nineteen and River - snowmobile trails on system roads.

WILDERNESS/PIT/VAULT TOILETS: Pit toilets.

EVIDENCE OF "MANAGEMENT/ADMINISTRATION:" High evidence, high density.

CAMPING PERMITS REQUIRED: At designated campsites.

TROUT FISHERIES: Manage Lake Nineteen and Rim Lakes for trout. Swan Lake to be both cold and warmwater fisheries.

SIGNING: Use natural barriers, gates and signs as needed.

ENTRY CYCLE: Proceed with 5.2 MMBF, FY88 sale, 20-year entry.

PINE MARTEN HABITAT: Entire area exclusive of W 1/4.

LOON HABITAT: Close access to lake in loon nesting season.

EAGLE NESTING HABITAT: Develop old growth, both marten corridors, plant bullheads in winterkill lakes.

OLD GROWTH: Designate 13% old growth.

EXTERIOR ROAD SYSTEM (440): Reconstruct as proposed.

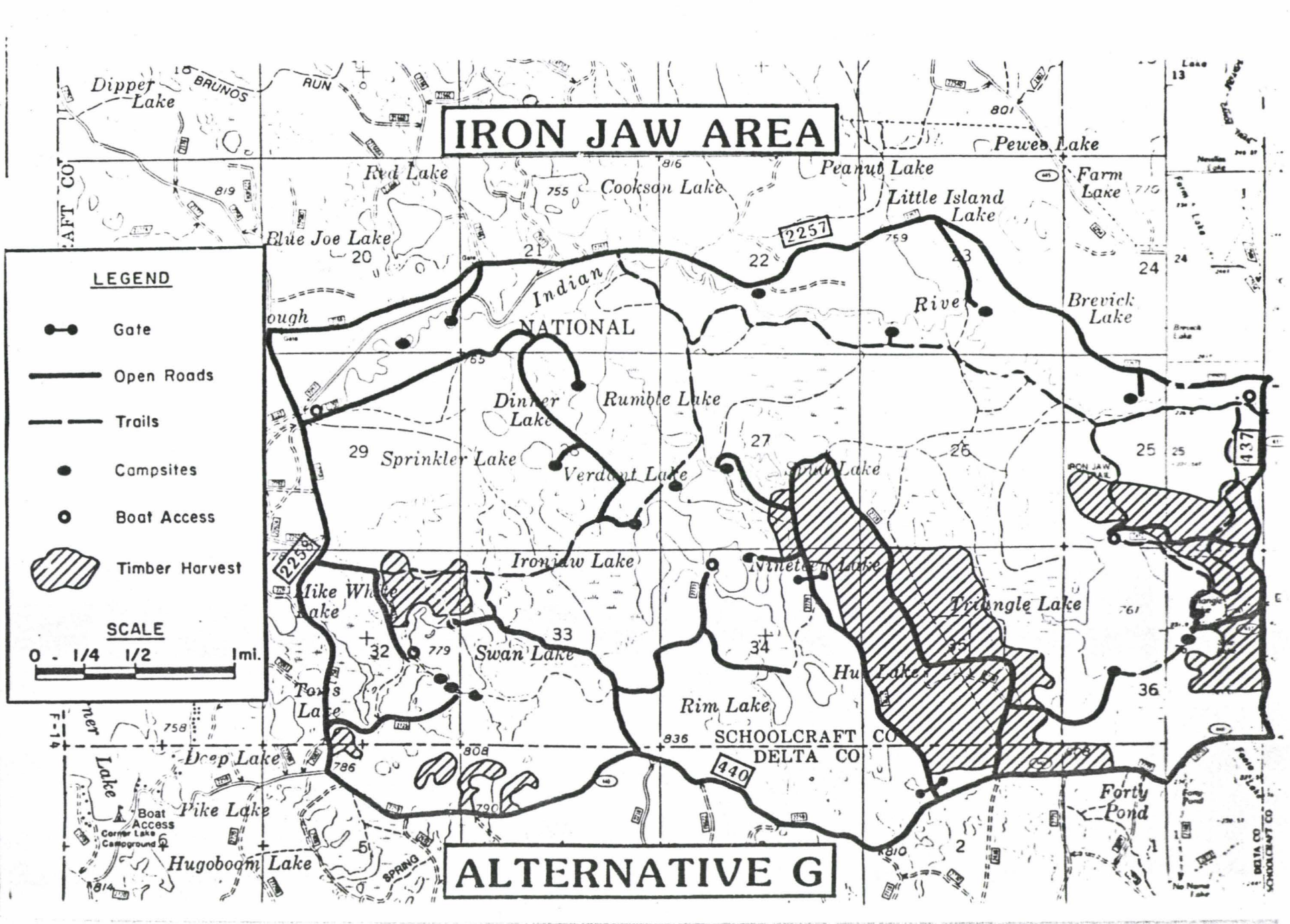
OWNERSHIP - COMPARTMENT 30: Acquire 80 in SE, private section of FR 2257, exchange away Straits Lake strip only.

BOAT AND ANGLER USE: Provide angler/boat access. Harden relocate if necessary.

OVERUSE OF SITES - SEMIPRIMITIVE EXPECTATIONS: Separate campsite from boat access and day use; provide canoe-in/hike-in campsites. No motorized camping within 100' of water; net increase in campsites. Drive-in boat access at Swan, Triangle, Iron Jaw, other lakes carry-in in greater than 100'.

ATV USE: Snowmobiles and ATV's on system roads.

VEHICLE TRAFFIC AND ROAD 2257: Relocate W end FR 2257 to FR 2166, allow 5 spur roads to river.


IRON JAW AREA
ALTERNATIVE G
LEGEND
Gate
Open Roads
Trails
Campsites
Boat Access
Timber Harvest
SCALE
0 - 1/4 1/2 1mi.
Dipper Lake
BRUNOS RUN
Red Lake
Cookson Lake
Peanut Lake
Pewee Lake
Farm Lake
Little Island Lake
Blue Joe Lake
2257
Indian
NATIONAL
Rive
Brevick Lake
Dinner Lake
Rumble Lake
Sprinkler Lake
Verdant Lake
2258
Ironjaw Lake
Nineteen Lake
Triangle Lake
Mike White Lake
Swan Lake
Rim Lake
SCHOOLCRAFT CO
DELTA CO
440
437
Deep Lake
Pike Lake
Boat Access
Corner Lake Campground
Hugoboom Lake
Forty Pond
SPRING

KEY POLICIES - ALTERNATIVE H

TYPE OF SURFACING: Multi-recreation use. May adjust gravel.

DESIGN OF ACCESS, FOR WHO AND FOR WHAT VEHICLES: 3 lakes motorized boat access. Vehicle camping 100' back. Selected river sites the same type of access/camping. Cross-country trails groomed if possible. Snowmobile and ATV routes.

WILDERNESS/PIT/VAULT TOILETS: Toilets at car camping sites.

EVIDENCE OF "MANAGEMENT/ADMINISTRATION:" Low timber harvests, low road density, trail maintenance (lower end of trail maintenance), routine wildlife surveys, intensive surveys for loon, pine marten, lake sturgeon, sandhill, sharptail.

CAMPING PERMITS REQUIRED: At all designated sites. Bush wacking o.k.

TROUT FISHERIES: Loon objectives primary, fish management secondary on Rim Lake. Lake 19 managed for trout. Triangle and Swan managed for warmwater fish.

SIGNING: Use natural barriers.

ENTRY CYCLE: Every 20 years. Red pine and sharptail management cuts are only sales now.

FIRE: Fire rings provided at designated sites.

PINE MARTEN HABITAT: Entire area exclusive of W 1/4 (leave out for sharptail).

LOON HABITAT: Loon objectives primary on Rim Lake.

EAGLE NESTING HABITAT: Develop old growth and both marten corridors, and plant bullheads in winterkill lakes.

OLD GROWTH: Designate 13% for old growth.

EXTERIOR ROAD SYSTEM (440): Don't reconstruct 440.

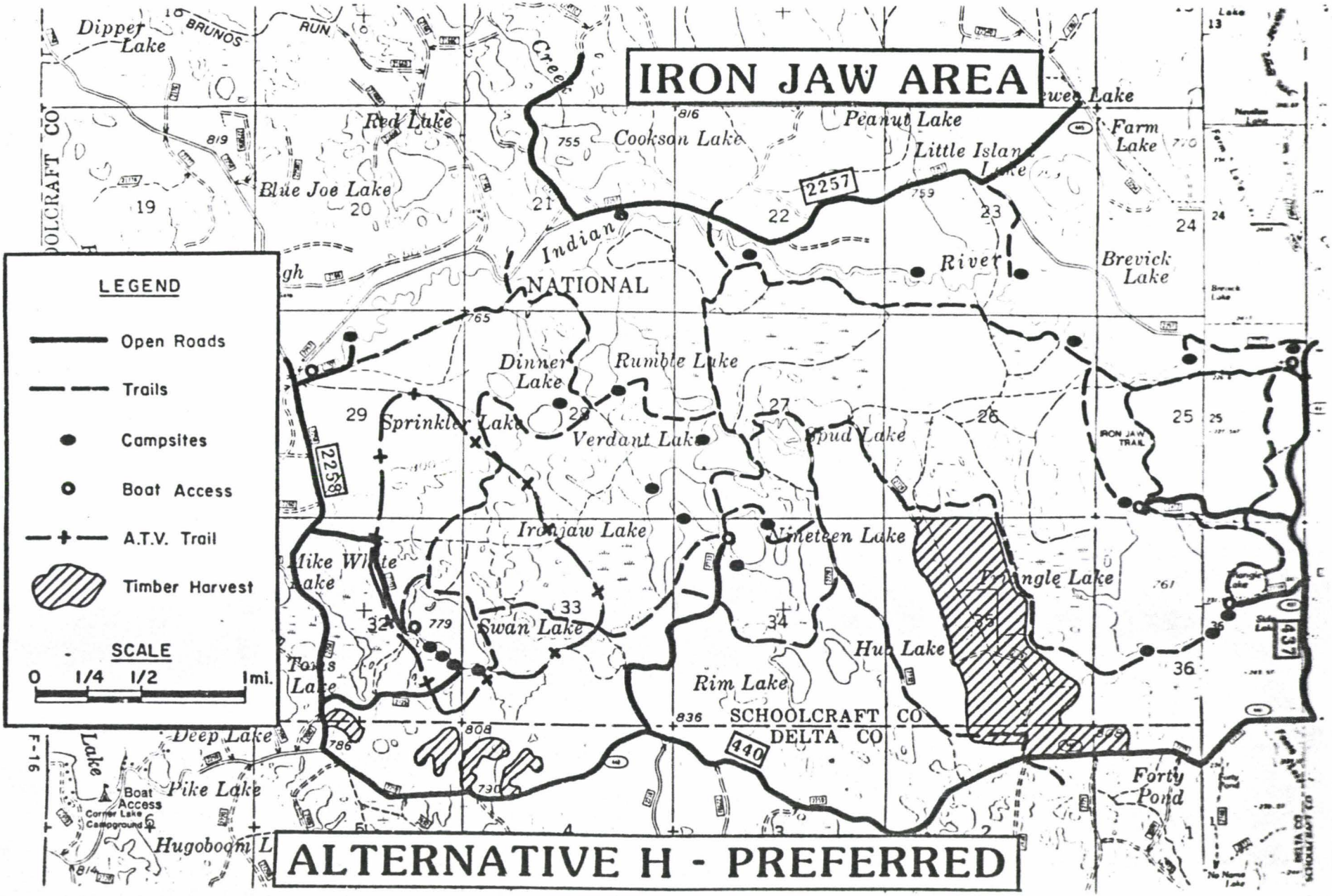
OWNERSHIP - COMPARTMENT 30: Exchange away land west of FR 2258.

BOAT AND ANGLER USE: Provide angler/boat access, harden/relocate.

OVERUSE OF SITES - SEMIPRIMITIVE EXPECTATIONS: Separate camping sites from day use and boat access. Require permits at all sites. No motorized campsites within 100' of water, provide canoe-in/ hike-in campsites; net increase in number of campsites, follow first decade access changes.

ATV USE: Designate roads and trails for snow use. Provide ATV trails for snow-free season.

VEHICLE TRAFFIC AND ROAD 2257: Close west 2 miles of FR 2257. Relocate West end FR 2257 to FR 2451. Close east 2 miles of FR 2257. Relocate east end to a logging road north of Little Island Lake.


IRON JAW AREA
ALTERNATIVE H - PREFERRED
LEGEND
Open Roads
Trails
Campsites
Boat Access
A.T.V. Trail
Timber Harvest
SCALE
0 1/4 1/2 1mi.
Dipper Lake
Red Lake
Blue Joe Lake
Cookson Lake
Peanut Lake
Little Island Lake
Farm Lake
Brevick Lake
Indian River
NATIONAL
Dinner Lake
Rumble Lake
Sprinkler Lake
Verdant Lake
Spud Lake
Ironjaw Lake
Nineteen Lake
Triangle Lake
Mike White Lake
Swan Lake
Hub Lake
Rim Lake
Forks Lake
Deep Lake
Pike Lake
Hugoboom L
Forty Pond
Boat Access
Corner Lake Campground
IRON JAW TRAIL
2257
2258
440
437
SCHOOLCRAFT CO
DELTA CO
F-16

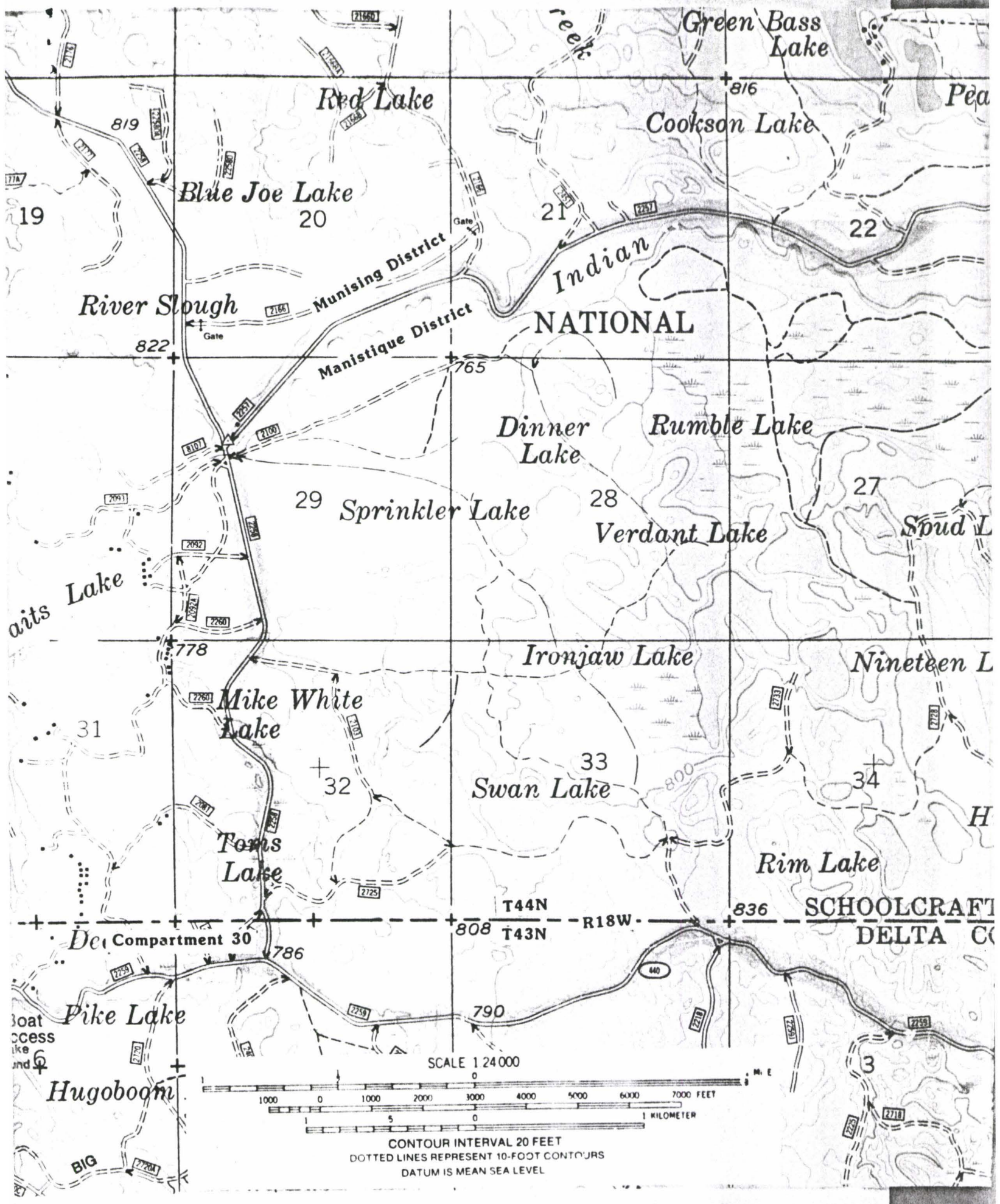
APPENDIX G

PROJECTS REQUIRED TO IMPLEMENT PREFERRED ALTERNATIVE

PROJECT

Close 2258 to 2451 2257 west
Close 2100 East at 3 miles east of 2258
Construct campsite #RS-1 (See analysis record map for site #)
Convert 2100 east to trail
Close 2257 (east 2 miles)
Reconstruct new road north of Little Island Lake
Construct campsite RN-1
Construct campsite RN-2
Construct trail TRN-1
Construct campsite RN-3
Construct campsite RN-4
Construct campsite RN-5
Construct TRN-2
Construct Swan/Rumble trail
Construct Sprinkler campsite
Construct Rumble/Verdant trail
Construct Rumble campsite
Construct Verdant/recreation trail
Construct RS-2 campsite
Construct RS trail
Construct RS-3
Construct trailhead parking 2100/trail
Construct Swan/Iron Jaw trail
Construct Iron Jaw trail 1
Construct Iron Jaw trail 2
Construct Verdant 1
Construct Iron Jaw/Verdant trail
Construct Nineteen campsite 1
Construct Nineteen campsite 2
Construct Nineteen/2732 trail
Construct Verdant/2732 trail
Install interpretive information signing
Construct south Iron Jaw to 2732 trail
Construct Swan Lake loop trail
Construct Swan Lake boat launch
Eliminate current site 1 (north) Swan
Refurbish Swan Lake site 2
Refurbish Swan Lake site 3
Refurbish Swan Lake site 4
Obliterate Swan Lake boat launch
Construct Swan day use (boat launch)
CC aspen stand 38 C29
Develop stand 38 C29 as opening
Develop stand 41 C29 as opening
CC stand 58 C29 jack pine
Maintain stand 58 C29 as opening
CC aspen stand 59 C29
Maintain stand 59 C29 as opening
Stock roughfish Spud Lake
Stock roughfish Dinner
Stock roughfish Hub
Construct Spud Lake to east side Triangle Lake trail
Construct Triangle site #4 west

Reconstruct Triangle site #1 north
Reconstruct boat launch in Triangle Lake
CR survey boat launch north Triangle Lake
Reconstruct boat launch Triangle Lake east
Reconstruct Triangle Lake site #2
Reconstruct Triangle Lake site #3
Thin red pine C28
Thin pine marten corridor
Construct Swan primitive toilet site 2
Construct Swan primitive toilet site 3
Construct Swan primitive toilet site 4
Construct primitive toilet Swan boat launch
Construct primitive toilet Nineteen boat launch
Close Iron Jaw existing boat access
Construct primitive toilet Triangle site 1
Construct primitive toilet Triangle site 2/3
Institute camping permits all campsites
Develop pine marten habitat - multi-stand
Relocate open canopy trail multi-stand
Land adjustments west of 2258
Relocate all existing campsites 100' minimum from water
Maintain Swan Lake 2 story fishery
Construct ATV loop trail
Fisheries Projects
    Inventory each waterbody once/decade (lake and stream)
    Rock bank stabilization on Indian River 1020 feet
    Log bank stabilization/cover 3065 feet (Indian River)
    Tree drops 47 (Indian River)
    Lake cover 25
    Bass spawning boxes 20
    Spawning habitat (Tributaries to Indian River)
Interpret 1 historic and 1 prehistoric cultural resource site
Improve oak stands through crown release


Green Bass Lake
Red Lake
816
Cookson Lake
819
Blue Joe Lake
19
20
21
22
Gate
Munising District
Indian
River Slough
2166
Gate
NATIONAL
822
Manistique District
765
Dinner Lake
Rumble Lake
29
Sprinkler Lake
28
Verdant Lake
27
Spud L
aits Lake
778
Ironjaw Lake
Nineteen L
Mike White Lake
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32
33
Swan Lake
34
800
Toms Lake
Rim Lake
T44N
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836
SCHOOLCRAFT
808
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DELTA C
Compartment 30
786
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Pike Lake
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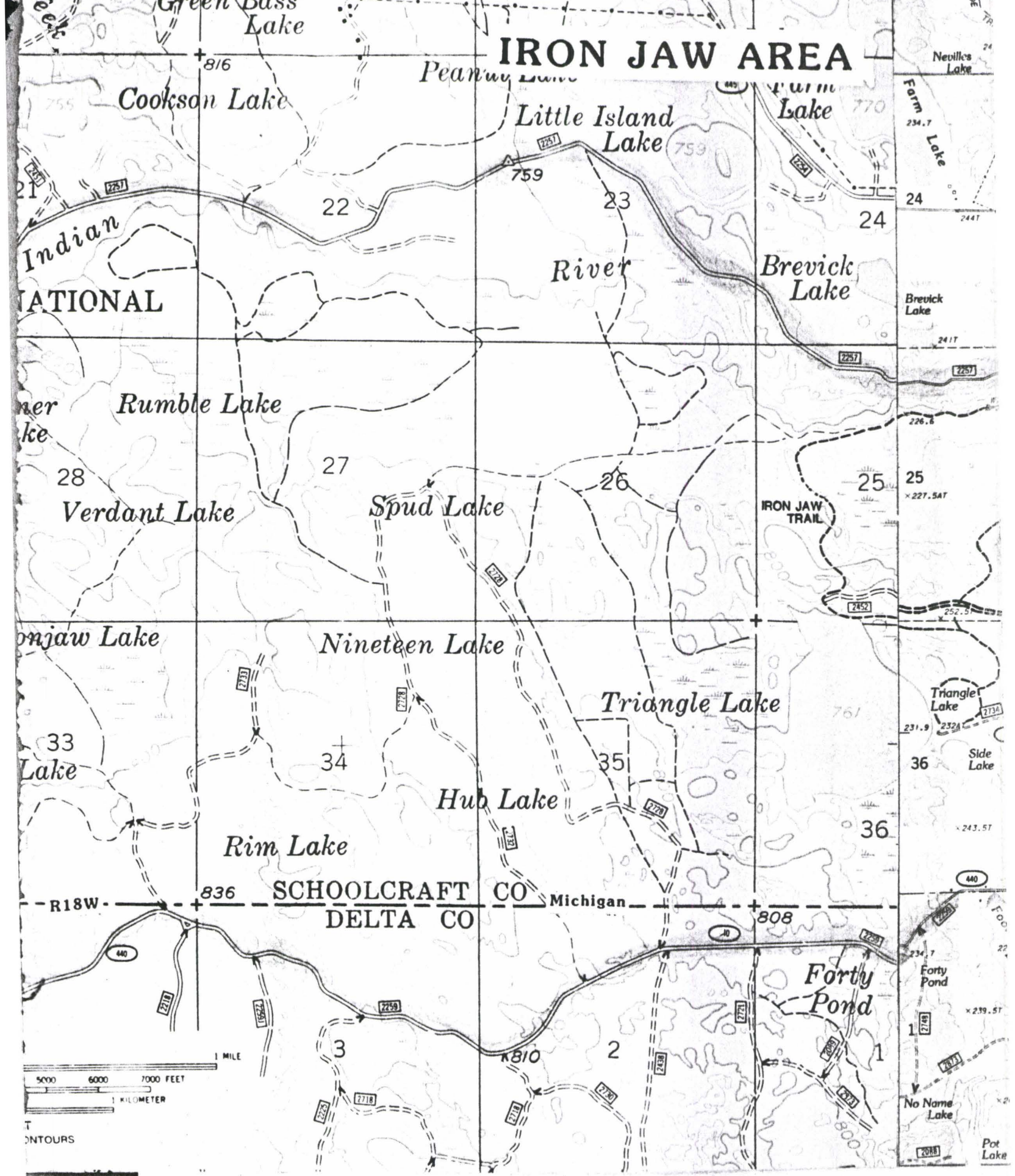
3
SCALE 1 24000
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
5 0 1 KILOMETER
CONTOUR INTERVAL 20 FEET
DOTTED LINES REPRESENT 10-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL
BIG


IRON JAW AREA
Green Bass Lake
816
Cookson Lake
Little Island Lake
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Farm Lake
Neville's Lake
Farm Lake
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244T
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23
24
Indian
RIVER
NATIONAL
Brevick Lake
Brevick Lake
241T
Rumble Lake
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26
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×227.5AT
28
Verdant Lake
Spud Lake
IRON JAW TRAIL
226.6
252.5
Nineteen Lake
Triangle Lake
Triangle Lake
231.9
2324
33
34
35
36
Side Lake
Hub Lake
36
×243.5T
Rim Lake
836
SCHOOLCRAFT CO
Michigan
R18W
DELTA CO
808
440
Forty Pond
Forty Pond
234.7
×239.5T
3
810
2
1
1
No Name Lake
Pot Lake
1 MILE
5000
6000
7000 FEET
1 KILOMETER
CONTOURS